SCIENCE

AEROSOL

THE MAGAZINE OF PRESSURE PACKAGING

IN THIS ISSUE:

- New Piston Container
- Dip Tube Manufacture
- Aerosols for Space Travel
- New Cold Filling Method
- First Aerosol Book
- Chicago Marketer

FEBRUARY, 1959

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Dr. Paul A. Sanders joined the Du Pont Company as a research chemist in 1940, after obtaining his Bachelor of Science and his Ph.D. degree in organic chemistry from the University of Minnesota.

Assigned to the company's Jackson Laboratory at Deepwater Point, N. J., Paul was active in studies leading to a number of patents in the fields of fluorescent whitening agents and stabilization of neoprene and other synthetic elastomers to light and heat. In 1953, he was assigned as a research chemist on aerosol propellents and aerosol applications and two years later joined the staff of the "Freon" Products Laboratory, where he has continued to work in the aerosol-propellents area.

Paul Sanders' work on water-in-oil emulsion systems for aerosol products has made possible a host of new aerosol products which were previously impractical. He and the many other chemists and technicians at the "Freon" Products Laboratory are continuously working to extend the frontiers of knowledge for the aerosol industry.

"Formulation techniques developed by basic Du Pont research help our customers create new uses for aerosols"

says Dr. Paul A. Sanders of Du Pont

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BETTER THINGS FOR BETTER LIVING
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THIS MONTH'S COVER

A close-up view of the new cold filling unit recently installed by DeMert & Dougherty, Chicago aerosol filler. A prominent feature of the new high-speed line is a heat exchange unit, reported to be the first of its kind in the industry. Story and another photograph appear on page 38.

FEBRUARY, 1959 VOL. 4, No. 2

AEROSOL AGE

The magazine of pressure packaging

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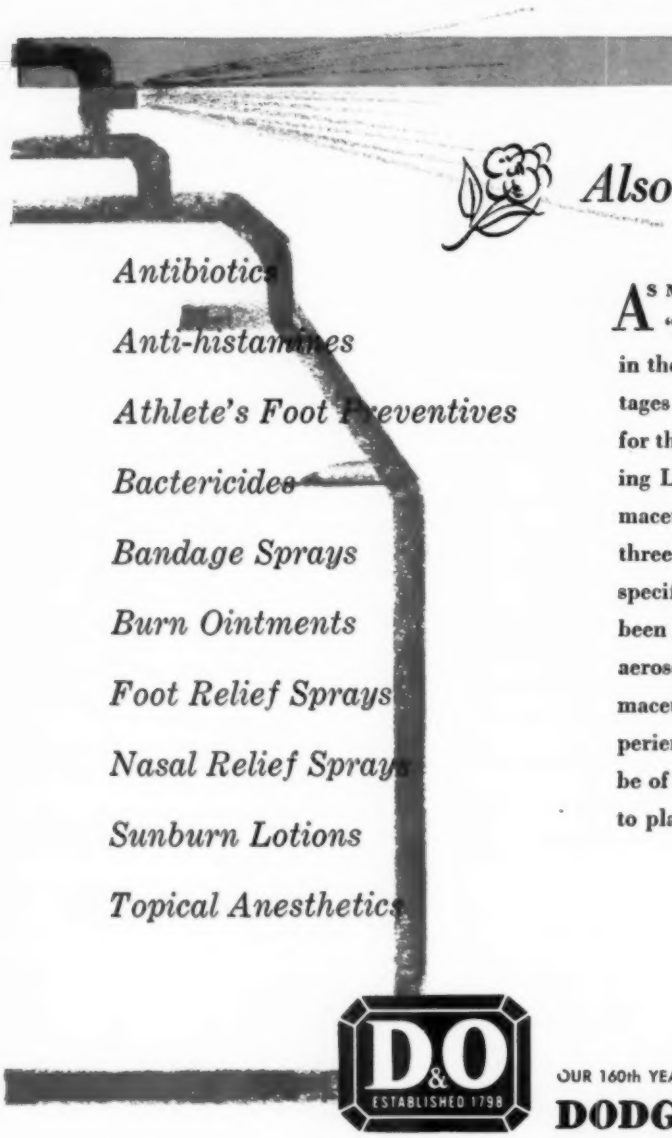
THE *New Look* IN PHARMACEUTICALS



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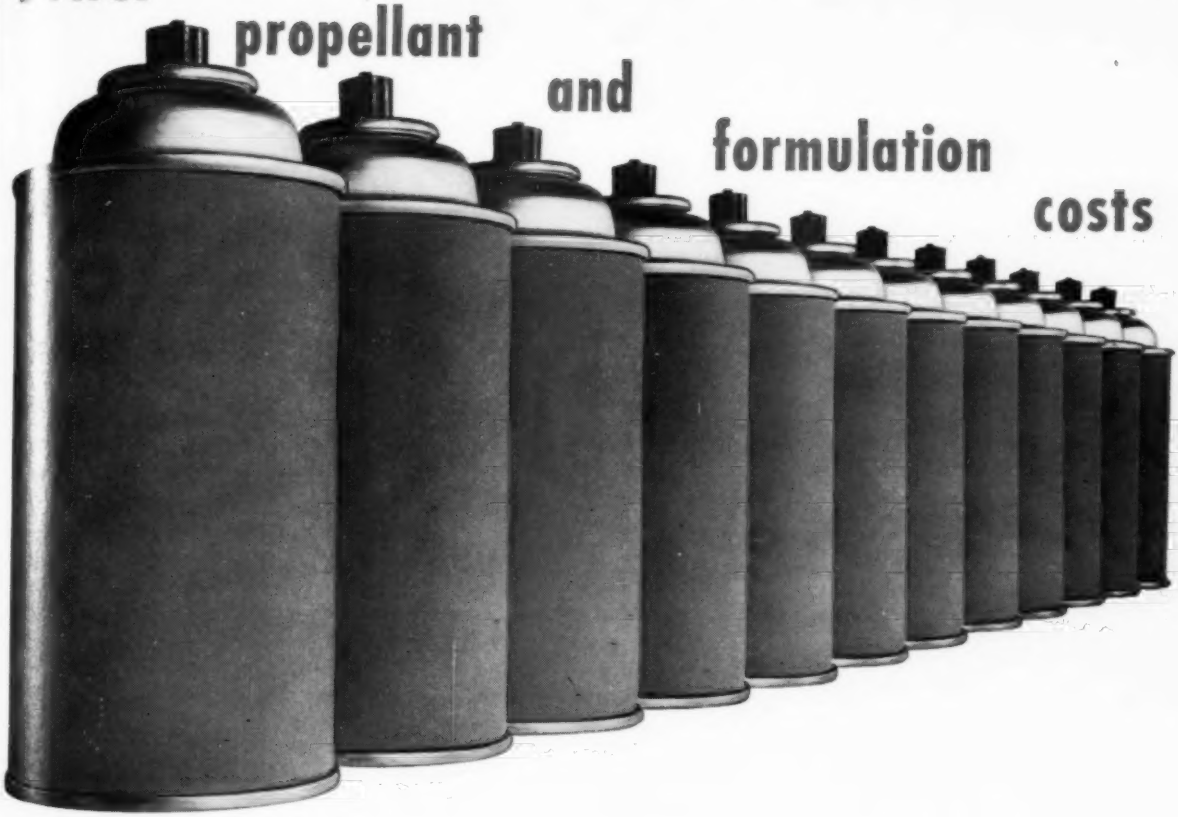

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INDUSTRY CALENDAR

National Canners Assn. and Canning Machinery & Supplies Assn., canners show and conference, Chicago.....Feb. 21-24

National Sanitary Supply Association, 36th annual convention and trade show, Conrad Hilton Hotel, Chicago .....April 12-15

National Packaging Show of American Management Association, International Amphitheater, Chicago, April 13-16; packaging conference, Palmer House, Chicago..April 13-15.

EUROPAK 1959, 5th International Packaging Exposition, Amsterdam, Netherlands .....April 21-28

Toilet Goods Association, 24th annual convention, Waldorf-Astoria, New York .....May 12-14.

Institute of Food Technologists 19th annual meeting, Bellevue-Stratford Hotel, Philadelphia, Pa. May 17-21

Chemical Specialties Manufacturers Association, 45th Mid-year meeting, The Drake Hotel, Chicago May 18-20

International Symposium on Gas Chromatography, of The Instrument Society of America, The Kellogg Center for Continuing Education, East Lansing, Mich...June 10-12

European Federation of Aerosol Associations, first meeting (at International Congress of the Chemical Industry), Paris, France..June 26

Packaging Machinery Manufacturers Institute, annual show, New York Coliseum, New York. Nov. 17-20

Toilet Goods Association, winter meeting of Scientific Section, Waldorf Astoria Hotel, New York Dec. 1

Chemical Specialties Manufacturers Association, 46th annual meeting, Mayflower Hotel, Washington, D. C.....Dec. 7-9

EDITOR'S MAILBAG

To the Editor:

The October, 1958 issue of *Aerosol Age* contained a most interesting article entitled "Dry Ice As An Aerosol Propellant" authored by Dr. L. W. Haase of Berlin, Germany. We are interested in learning more about the technique of producing the transparent dry ice referred to in this article.

(*Continued on Page 77*)

In the Spotlight this month

• **New Piston Aerosol Container Announced by Oil Equipment** . . . What could be a revolutionary new aerosol container development—one that provides complete separation of product and propellant—is unveiled in this special **Aerosol Age** article beginning on page 20. The individual components are shown and the physical operation described.

• **Dip Tubes for Aerosols** . . . The plant of the leading aerosol dip tube manufacturer is visited for a long look at the principles, operations, and future of dip tube manufacture. Extrusion procedures, quality control methods, and new materials research are discussed in an illustrated article on page 22.

• **The Aerosol . . . Food Package for Space Travel** . . . To refute recent claims that the squeeze tube offers the most promising possibilities for space-vehicle feeding, a Florida chemist advances the idea of using percent aerosol technology to adapt the aerosol's capabilities for the same purpose. Specific food types and possible chemical drawbacks are reviewed in the article, which begins on page 26.

• **First Aerosol Book Published** . . . The first full-scale aerosol technical book is reviewed fully on page 46. It is analyzed as to general quality, text material, photographs and diagrams, etc.

• **DeMert & Dougherty Installs New Cold Filling Line** . . . Making use of a newly-developed heat exchanger, a Chicago aerosol filler achieves line speeds of 120 containers per minute. Complete details of how new unit works are included in article on page 38.

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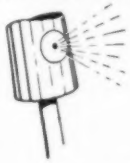
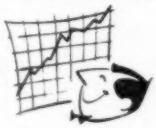
Once Upon A a happy Aerosol man wanted to be more successful. His product was good, but not selling as smoothly or as much as he wanted. Then he got just the he needed for increased success! "I'll try the Quality Newman-Green Aerosol Valves  and see if their exclusive features really do help  profits."

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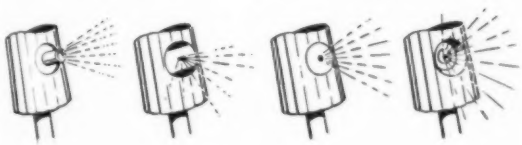

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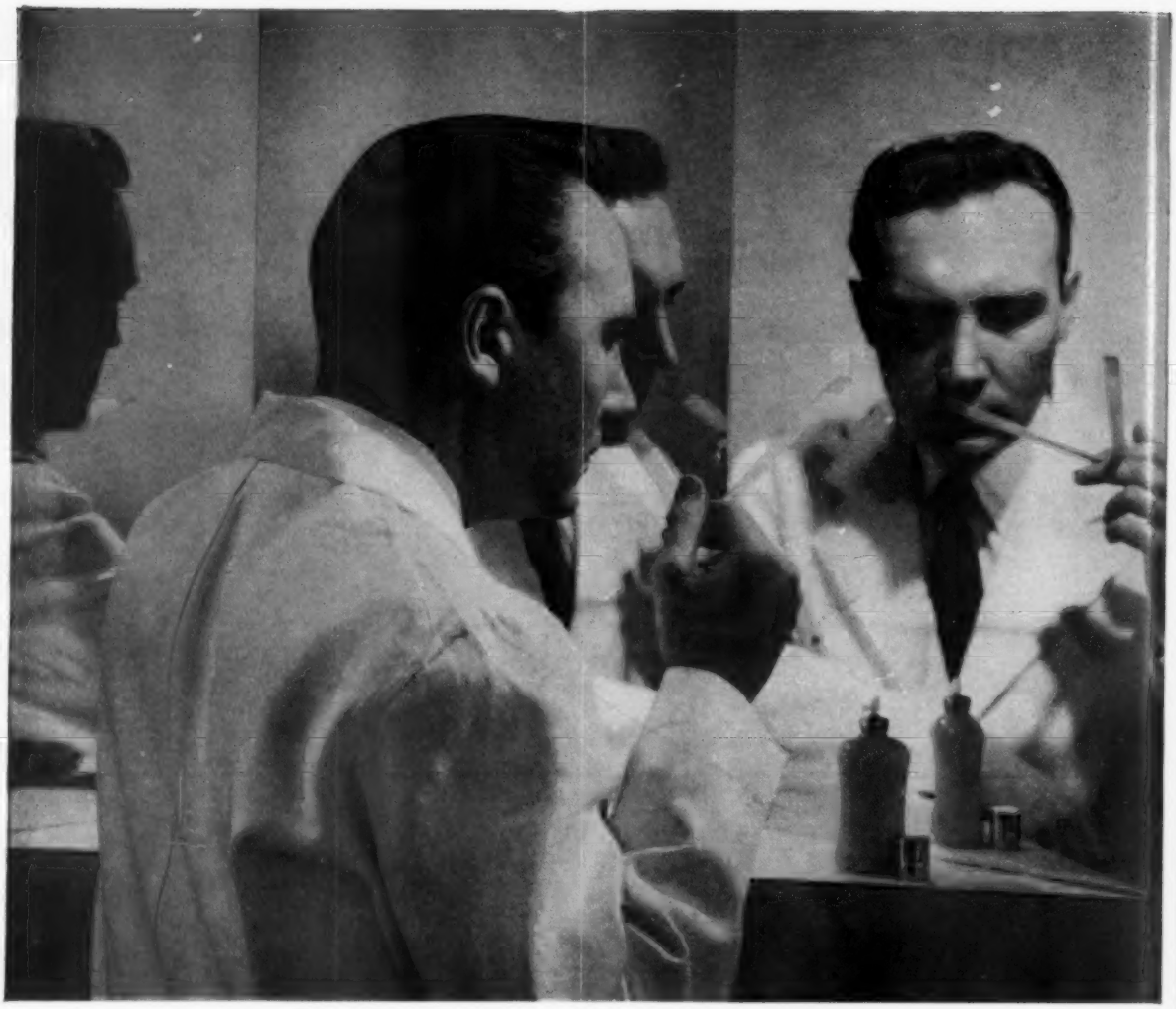

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EDITORIALS

Reassurance through Research . . .

These days marketers and packagers of hair sprays should be breathing far easier and sleeping far better. Two speakers at the December meeting of the Chemical Specialties Manufacturers Association, and one at the December meeting of the Scientific Meeting of the Toilet Goods Association were extremely reassuring in their reports on recent laboratory tests conducted to determine the long-term effects of hair spray inhalation. Since all three of these talks were reported in the January issue of this magazine, we will concentrate on the specific remarks of the most influential of these speakers, George P. Larrick, Commissioner of Food & Drugs of the U.S. Department of Health, Education, and Welfare.

Mr. Larrick reported that clinical investigation by FDA researchers had so far indicated that there is *no* concrete evidence that "hair sprays are injurious to test animals". He pointed out that this type of clinical testing might better have been done *before* the products were introduced on the consumer market. In conclusion he declared: "I am certain we (of the FDA) and the marketers themselves would have felt considerably more at ease if we had known that these products had been so tested *prior* to introduction on the general market."

If this statement had come from one of the industry speakers at a usual CSMA meeting, it wouldn't have been particularly significant. But coming as it did from the head of a powerful government agency, which has the power to "make or break" a particular product or family of products, this statement should probably be placed in the "earth-shaking" category. In effect, what Mr. Larrick said would seem to indicate that the FDA is fully aware of certain shortcomings in research of the aerosol industry, and that it is fully cognizant of the inherent perils of spraying a product into the air in particles small enough to be readily absorbed by the human respiratory tract.

If the industry is at all receptive to warning signs, the hullabaloo over the relative dangers of hair sprays, plus the remarks of Commissioner Larrick, should trigger new research activity in the laboratory of every major aerosol marketer. Animal inhalation research, particularly for large volume products and families of products, should become standard operating procedure in the future. For those companies that may feel they cannot afford this type of research, perhaps they would do well to combine resources with those with similar research budgets.

In the light of recent events this approach to aerosol research has become a necessity to protect a flank of the aerosol industry that has been too long exposed. It now seems fairly evident that if there had been FDA substantiation of the findings of the St. Louis doctors (which they published in the *New England Medical Journal*), it might well have signaled the doom of the flourishing hair spray business, and could have had profound effects on the entire $500 million aerosol industry. Similar confusion and even havoc could result should some other leading aerosol product type be found to contribute to a chronic ailment.

What the industry needs is basic and applied research data to refute claims such as those made by the St. Louis doctors *as soon as they are published*. By marshalling factual data on all potential dangers of the product, the marketer should be able to counter these attacks immediately—without necessitating "crash investigations" by the FDA or any other governmental agency.

New Piston Aerosol Container Unveiled by Oil Equipment

A NEW container development that could revolutionize pressure packaging has been announced by Oil Equipment Laboratories, Inc., Elizabeth, N. J. A distinct improvement over the various piston containers investigated several years ago, the new container also offers a number of refinements over the conventional aerosol unit that should make it an important factor in future development of the pressurized package.

The new container (actually a complete package without product or propellant) consists of a thin-walled aluminum container fitted with an aluminum piston that looks remarkably like an automobile engine piston, capped by a top piece equipped with a valve or other dispensing mechanism. In outward appearance, the assembled unit looks very much like a conventional aerosol package, but it is in the mechanics of its operation that it is so radically different from the usual aerosol container.

The most striking thing about the new development is the practical achievement of mechanical separation of the propellant and product phases. This one refinement will enable the piston package to be used for many new highly viscous products, including pharmaceuticals, foods, and similar products that cannot currently be packaged with fluorinated hydrocarbon propellants. At the same time it overcomes the one major shortcoming of present-day nitrogen packaging — pressure drop as the product is expended, coupled with possible inactivation of the entire package through accidental propellant discharge or leakage. The piston container will also assure almost total evacuation of the product in the container, something not yet fully realized with the nitrogen package.

The new piston container, Oil Equipment executives admit, is, in essence, a squeeze tube powered by a liquefied gas. The walls of the impact-extruded aluminum container are thin enough so that the exact position of the piston can be felt by the application of finger pressure to the sides of the container. The internal pressures are such that the walls of the container can be pushed in slightly, but will immediately spring out to their original shape as soon as the external pressure is released. The thin walls thus offset an early difficulty encountered with piston-type containers—the tendency of even minor dents to "hang-up" the piston and thus render the entire container inoperative. To put it another way, the internal pressure, because it is equal throughout the interior of the container, works directly to preserve the shape of the can, and at the same time overcomes any dent or other flaw received in handling or shipping.

For the actual filling operation, the empty container enters the line with the piston in position on the bottom. The product is filled through the open top of the container (at even higher speeds than are now possible with the standard one-inch opening), and then the top (with the valve) is double seamed in place. Further along the line the propellant charge is inserted under the piston by means of a needle filler, which punctures a special self-sealing rubber seal in the concave bottom of the container. The can is then tested for leakage either by the conventional hot water bath method, or by inverting the can and simply filling the concave bottom with cold water.

The only real departure from conventional aerosol filling techniques is the needle propellant charging unit. An Oil Equipment Laboratories development, this device has been used successfully by the Ronson Co. to fill butane cigarette lighter cartridges. The cured rubber seal at the bottom of the container seals itself immediately because of the internal pressure of the liquefied gas. Because of this quick seal, the needle filling method would appear to offer advantages, in the matter of gas loss, over both cold and pressure filling equipment.

Since the propellant and product are physically separated by the aluminum rubber-ringed piston, propellant-product compatibility problems are immediately overcome. For the packager this would mean that the cheapest possible liquefied propellant could be used to actuate the piston, and butane-propane mixtures could be used on a far larger scale than hitherto. In fact, this propellant saving could be used to more than overcome the cost of the piston unit, which Oil Equipment's Jack Wittke estimates will be only about two or three cents (per unit) more than conventional containers after the piston units go into full production.

There is another propellant saving in the amount of liquefied propellant

✲ *a special Aerosol Age staff report*

A disassembled piston container, showing each of the components. From left in the foreground is the piston, the valve, and the cover. The container at left rear is turned over to show the underside, with its gas charging nipple. At rear is a finished package.

used to activate the piston. A usual charge will be about three grams of fluorinated hydrocarbon propellant, as against something like ten grams for the conventional aerosol with its headspace and propellant absorption by the product. Oil Equipment technicians have been working with pressures of 50 psi, but this can be adjusted upwards or downwards depending on the viscosity of product and desired delivery rate. Experimental tests have been carried out with pressures as high as 100 psi, with no noticeable distortion of the container walls.

One of the package's chief advantages over the nitrogen package is that it can be operated in any position, with no chance of propellant loss or valve cloggage. Thus the directional spout so characteristic of most nitrogen valves could be either kept or eliminated, depending solely on general container design. This would also apply to overcaps, which could be modified or even eliminated with the new container.

In addition to the obvious mechanical advantages, probably the chief aesthetic and practical advantage is the fact that nearly any liquid or semi-liquid product can be dispensed *with no reformulation*. In other words, toothpastes, cheese spreads, chocolate syrups, fruit concentrates, furniture polishes, baby foods, etc., could be dispensed in exactly the same form as that in which they are currently packaged—and accepted by the consumer. The new package overcomes the objection, sometimes heard at the consumer level, that the consistency of nitrogen-powered toothpaste is too different from toothpastes packaged in collapsible tubes.

Carrying this a step further, the piston package eliminates the chilling effect of vaporizing propellant—something that has been holding back more widespread use of personal deodorants, pharmaceuticals, and other personal products in the conventional aerosol package. If this development were carried to its logical conclusion, Oil Equipment technicians point out, any product presently packaged in an aerosol container, a collapsible tube, or a squeeze bottle, could be practically and economically dispensed from the new piston container.

The whole development was the result of a joint effort by the research departments of Oil Equipment Laboratories and two other well-known aerosol suppliers. The aluminum container was perfected by Peerless Tube Corp., Bloomfield, N. J. It is impact-extruded and relatively cheap in cost—since the container walls are thin and there are no shoulders or other refinements usually associated with aluminum aerosol cans. The aluminum piston, which has shoulders to prevent tipping, can be made on standard machines for making screw caps. It and the can top were developed by the Continental Can Co., at its Passaic, N. J. plant.

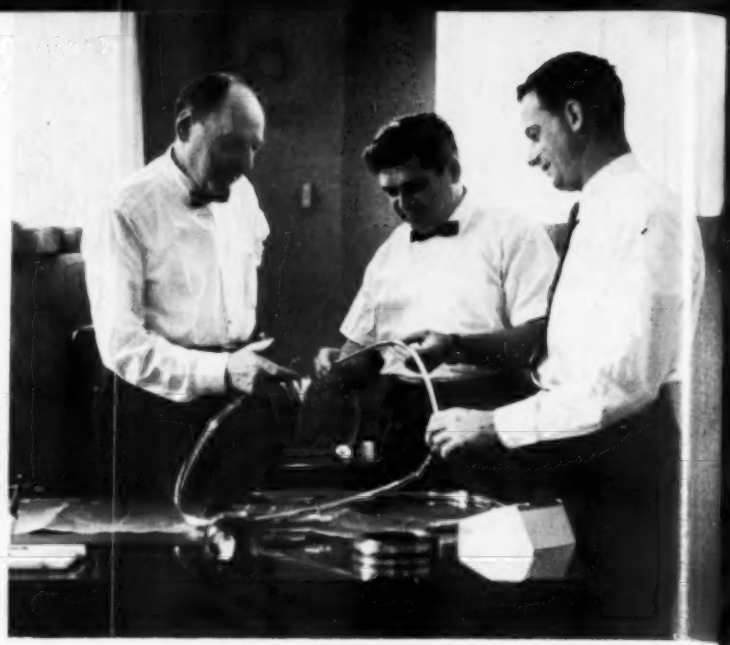
Though present experimental models have been tested in only the six and the 2½-ounce sizes, a future is seen for containers of 16 ounces and even larger. John Ayres, Oil Equipment vice-president, points out that the impact extrusion method, combined with the relatively thin walls, makes possible the fabrication of this type of container in practically any large size. The absence of the side seam, he says, will do much to eliminate corrosion problems, and at the same time allow a wide range of wrap-around lithography and other container decoration possibilities.

"The thing that is unique about this development," Mr. Ayers declares, 'is that it is actually a balloon. The usual approach has been to take the conventional aerosol can and work from there. For this development we began with the idea of taking aluminum and seeing what could

(*Continued on Page* 72)

Dip Tubes for Aerosols

Formulation Skills and New Materials Research Make Anchor Plastics a Leader in Manufacture Of a Key Package Component



A candidate material for extrusion is discussed by Richard Fisch, Anchor president; Myron Rothman, vice-president and production manager, and Leo Gans, assistant general manager.

OF THE three major physical components of the aerosol package—container, valve, and dip tube—probably far less has been written about the dip tube than on either of the other two. The principles and techniques of dip tube manufacture, materials of construction, size specifications, and special applications are all phases of this subject that have been relatively untouched in recent aerosol literature. To overcome this deficiency, *Aerosol Age* last month visited the Long Island City. N. Y. plant of Anchor Plastics Co., foremost producer of this material and developer of many new dip tube materials and manufacturing techniques.

In the Anchor Plastics' plant may be found up-to-date research facilities, improved manufacturing equipment, and other evidence to indicate that the company is fully cognizant of the key role the dip tube plays in the aerosol package. In fact, throughout the manufacturing and shipping processes, infinite pains are taken to see that dip tubing is left with no physical or chemical shortcomings that will later come back to haunt either the valve manufacturer or the packager and marketer of the pressurized product. Testimony of how successful the company has been in this aim is the fact that Anchor tubing is currently being used by nearly every major U. S. valve manufacturer, and is being shipped to South America and other overseas markets.

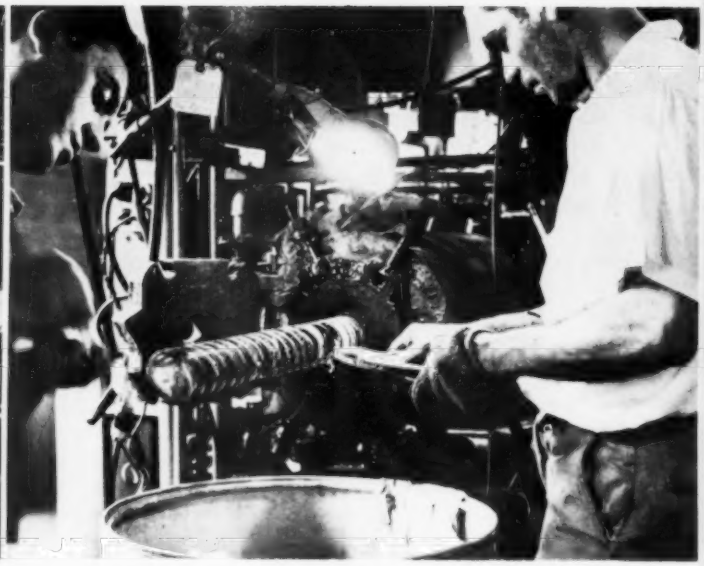
Despite all the exciting variations and many new materials currently being fabricated by Anchor Plastics for dip tubing, the "bread and butter" product for its aerosol customers is still something called "Aeroflex P." This material, estimated to be used probably more widely in the industry than any other material, is a special formulation of polyethylene.

In striving for a candidate for an "all-purpose" dip tube material, Anchor chemists, working with those of leading valve companies, discovered that standard polyethylene, though fairly easy to work with, left much to be desired from a chemical standpoint. Standard polyethylene often cracks, particularly when it is extended or otherwise placed under stress (as it would be when stretched over an aerosol valve nipple) and this weakness is especially evident in the presence of alcohols, aromatics, and other aerosol ingredients. By careful compounding with small amounts of other thermoplastics, and by means of refinements in manufacturing techniques, Anchor achieved a material that demonstrates excellent stress-crack resistant features.

AT THE Anchor plant, the raw material (usually in sacks or in barrels) arrives from the basic supplier. It is then dried of all moisture (which would produce damaging steam during the fabrication process) in ovens maintained at temperatures of about 160°F. When colored dip tubing is to be made, pigment or dye is mechanically mixed with the plastic before it is placed in the trays of the drying ovens. For "Aeroflex P," the materials are dry blended, then fusion or hot blended, and then finally dry blended again. Quality control personnel are present to check to see that the resulting mixture is highly uniform before it is fed into the extrusion machinery.

The extrusion machinery operates on a principle similar to that of a kitchen meat grinder. The mixed plastic in granular form is fed into a large hopper on top of the machine. As it is drawn into the machine, an electronically-controlled heating unit quickly brings it up to temperatures ranging from 250 to 600° F. A screw

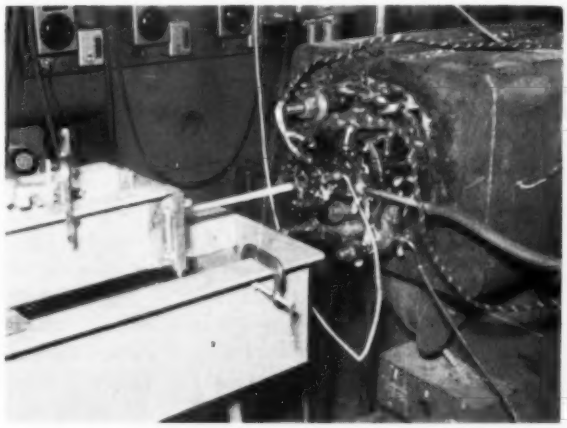
A general view of the manufacturing area. In the center foreground the dip tubing is being fed from the cooling trays to the winding spools.



During the normal course of the manufacturing operation, the machines are shut down periodically to permit cleaning of the coil that impells the hot plastic.

powered by a worm gear then feeds the liquefied plastic through a die, during which air is blown through the center to maintain the interior shape necessary for aerosol packaging. As the hot tubing emerges from the extrusion machine it is fed into a long trough filled with running water. In this tank, which cools and solidifies the tubing, the material travels a distance of about 50 feet, being held under the surface of the water by a system of rollers. At the end of the trough a special counter measures length, and from there it is wound onto disposable cardboard spools. Developed specially by Anchor engineers, these spools protect the tubing during shipment and storage, preventing twisting or kinking and maintaining firmness. These lightweight disposable containers eliminate the need for the customer's shipping them back.

The Anchor plant is laid out so that the raw material comes in one side and the boxed dip tubing goes out the other. The company makes drop shipments to its customers all over the country, so that most of them receive a sizeable shipment about once a week. Though valve manufacturers are the firm's primary



The "working end" of the extrusion machinery, from which the hot dip tubing is emerging. To the left in the photo may be seen the beginnings of the long water cooling tanks.

A workman assembling one of Anchor's dip tube shipping spools. The disposable spools, made of cardboard, are simply thrown away by the user.

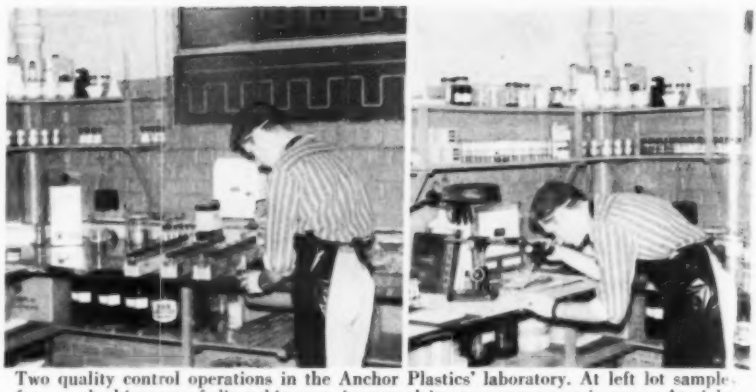
customers, it ships pre-cut tubing to fillers for special packaging projects, for food packaging, and for their own research.

Some of the other thermoplastics made into dip tubing by Anchor—nylon, for instance—are too stiff to spool and are shipped in pre-cut lengths. Since nylon is manually staked anyway, it is usually shipped directly to the user rather than to the valve manufacturer.

In addition to the better-known "Aeroflex P" and nylon, the company has been working to perfect a whole series of new and exciting dip tube materials. Polypropylene, for instance, since it is sterilizable by boiling and can be extruded by conventional methods, shows high promise for use with pressurized food products. Another material of exceptional promise is Anchor's "Aeroflex 3 Star," which is designed primarily for metered valves and instead of being slip fit over the nipple must be press fit into it. Naturally, this material has to have exceptionally critical diameter tolerances.

Other Anchor developments have been the pinked cut (which prevents clogging through sticking of the tube to the concave bottom of the can), angle cutting (which performs a similar function), and precise length cutting of plus or minus .010 inches for special small container applications.

Among the other materials about which the company management seems particularly excited is a new General Electric plastic called "Lexan." This is a steam sterilizable, transparent material that is expected to find widespread use in quality food products, fine perfumes, and similar specialty products where low cost may not be the prime factor.



Two quality control operations in the Anchor Plastics' laboratory. At left lot samples from each shipment of dip tubing are immersed in strong reagents in trays. At right the samples are examined through a microscope for signs of stress.

One of Anchor Plastics' best resources is its highly developed quality control procedure. Small samples are cut from the dip tubing spool for each valve customer, carefully catalogued, and then inserted onto the nipple of that customer's valve. Each of these samples then undergoes a 48-hour stress crack test immersed in reagents(at elevated temperatures) that are known to create chemical breakdown in tubing that has been improperly compounded, extruded, or cooled. Richard A. Fisch, Anchor Plastics' president and founder, points out that the tests carried out in his company's quality control laboratory are, for the most part, considerably more severe than those with which the valve manufacturers test their own valve assemblies. After the tests are run, the tube samples are closely examined through a special magnifying device or through a microscope for signs of stress or cracking.

The company's laboratory is also charged with the responsibility of research on and development of new materials. New types of thermoplastics are extensively tested (under heat, pressure, and in various reagents) for behavior under practical packaging conditions. Small scale extrusion units are kept here in operating condition to enable Anchor researchers to turn out pilot quantities of new materials, and improvements in manufacturing techniques to achieve certain characteristics are then devised and studied.

The laboratory works closely with the company's large and well-staffed tool and engineering department, which must design, maintain and build the actual manufacturing machines. In this department is maintained a large and carefully catalogued spare parts pool, since improvements in extrusion techniques can often be achieved through an interchange of dies or gears.

One of the striking things about Anchor Plastics is the fact that despite the high degree of technology displayed by the company's management and staff, it is a comparatively young company. It was first organized in 1941 by Mr. Fisch, along with three employees, in a rented loft in Grand Street in New York City. With one extrusion machine he began to extrude barrels for pens and ferrules for pencils from cellulose acetate butyrate. It was a year before he was able to afford another extrusion unit, but since then he has been adding them at the rate of one a year. The number now is 18. The company moved to its present location in 1952 and since that time has settled down to rapidly improving its technology and manufacturing techniques.

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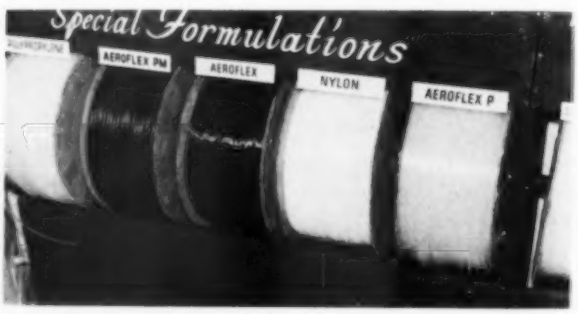

Anchor Plastics' exhibit at the CSMA convention in December showed samples of the various dip tube materials side-by-side for comparison of physical characteristics.

van Ameringen-Haebler's plant at Union Beach, N. J.

van Ameringen

VAH, Polak & Schwarz Merge

Brummer

The Zaandam plant of Polak & Schwarz

TWO major producers of fragrances and flavors, van Ameringen-Haebler, Inc., of New York, and Polak & Schwarz, N.V., of Zaandam, Holland, early last month announced that they have merged their operations. Both companies will retain their identities as divisions of a new parent company, to be known as International Flavors & Fragrances, Inc., with headquarters in New York.

Through its wholly-owned manufacturing subsidiaries in 15 countries, International Flavors and Fragrances will supply fragrance materials for use in drugs, cosmetics, perfumes and aerosols on a world-wide basis. The announcement of the merger pointed out that it will be of special importance to U. S. and foreign-based companies which manufacture and sell abroad through overseas branches and subsidiaries—since problems of importing materials are becoming more complicated by tariffs, currency resitrictions, and import licenses. Through the merger the overseas producer will be able to manufacture locally in such areas as England, Canada, Holland, Switzerland, France, South Africa, Indonesia, Brazil, and Argentina.

Van Ameringen-Haebler recently completed a $1.5 million expansion of its manufacturing and research operations at Union Beach, N. J. Through the use of modern techniques and highly instrumented equipment of its own design, the company is annually producing more than 2.5 million pounds of perfume materials.

Polak & Schwarz brings to the new company a world-wide manufacturing and distrbiuting organization which has steadily expanded since the company was founded in 1889. At the start of its activities, the firm's activities were confined to Holland, but Polak & Schwarz later opened plants in Belgium and France, and in 1926 opened another in England. Today the company operates manufacturing units in 15 countries, and has more than 100 sales agents throughout the world.

Both companies have done considerable developmental work with aerosol packaging, and both have extensive aerosol laboratories and technical customer assistance staffs.

Principal officers of international Flavors and Fragrances are A. L. van Ameringen, board chairman; Charles P. Walker, president; C. C. Brummer, executive vice-president; and Adoph Schwarz and Waldo F. Reis, both vice-presidents. Messrs. van Ameringen, Walker, and Reis previously held these same positions with van Ameringen-Haebler, and Messrs. Brummer and Schwarz served as managing directors of Polak & Schwarz.

In commenting on the merger, Mr.

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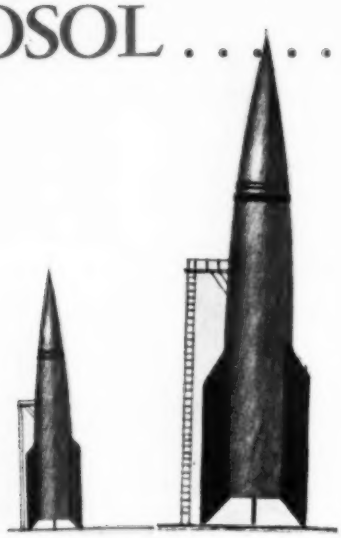
The

AEROSOL . . . . . practical food package for coming space travel



*By Robert A. Nanz**
Florida Chemists & Engineers, Inc.
Orlando, Florida

FOR some time it has been known that men, traveling in outer space, will have to be fed by special methods. And since recent developments both in the U. S. and Russia indicate that men will be traveling in space in a matter of a very few years, a suitable means of feeding them must soon be developed.

The principal problem in space (from a feeding standpoint) is apparently "weightlessness," which is experienced outside the earth's gravitational field. In the weightless state, foods, liquids, utensils, and any other common feeding materials and implements will float free in the closed-in atmosphere of the space vehicle. Therefore, the food must be contained—and the container used for this must be anchorable. This could be done practically with magnets, which can be used to hold a metal container (or a glass container with a metal base) firmly in place.

Pressurized food packages, or "aerosols" are the logical container type for such feeding. Push button actuation propels the food out of the container and directly into the mouth. The many conveniences of such a feeding system are apparent.

An essential part of any long-range diet will undoubtedly be horticultural products, including fruit and vegetable juices and purees. All of these can be dispensed practically from existing aerosol propulsion systems. Also, present data indicates that fruits and vegetables mixed with other ingredients of the diet will serve as the principal meal components for the space-traveler's use. Then too, a variety of other foods could be packaged under pressure to better provide the space-traveler with a balanced, and appetizing diet.

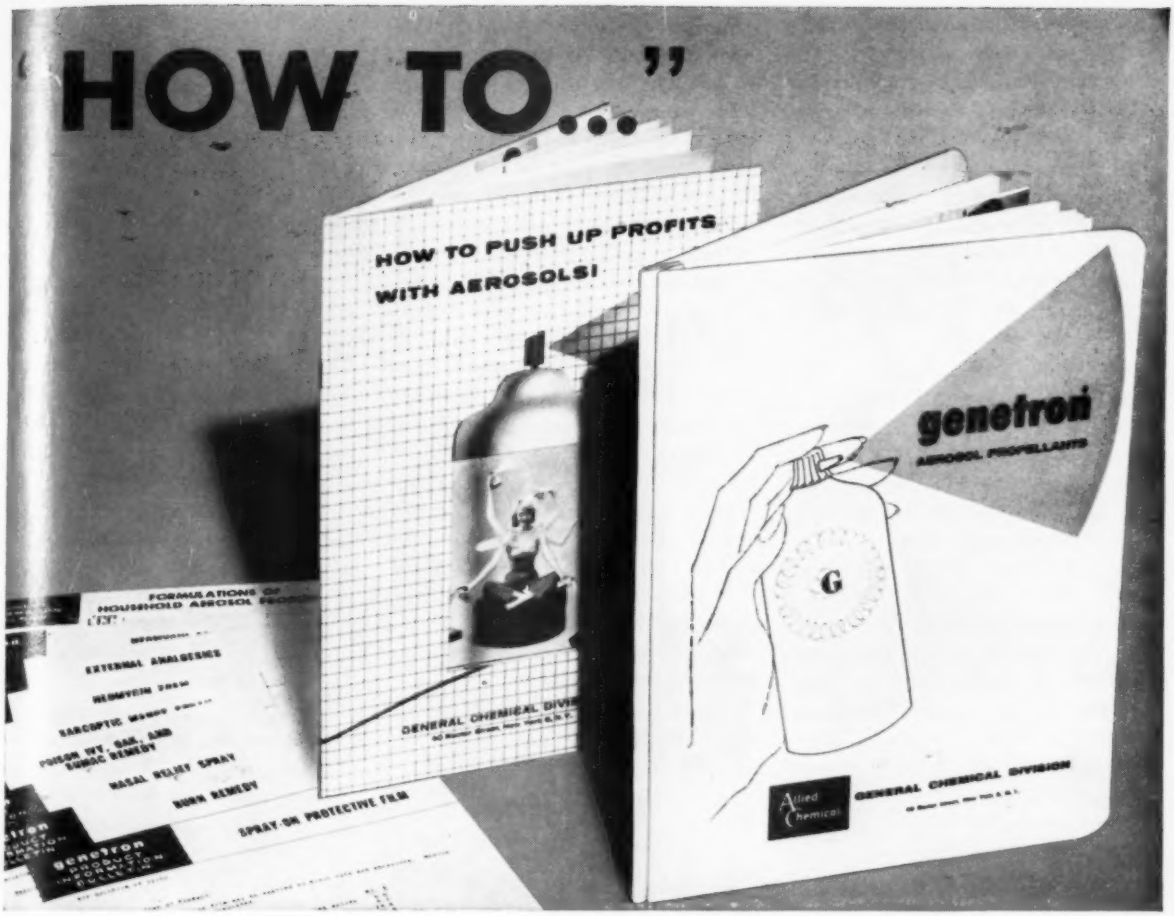
At the Chicago meeting of the Institute of Food Technologists, held in May of last year, a symposium on space feeding was held. At this symposium it was pointed out by Hanson[1] that either artificial gravity would have to be produced (possibly by centrifugal force in a spinning space ship) or special packaging techniques would have to be used for food to prevent it from flying about within the space vehicle.

CONCERNING the removal and utilization of by-products from human digestion and metabolism, a new regenerative cycle to use everything by chemical means was suggested by Gaume,[2] Brockman,[6] and Tischer.[7] Carbon dioxide and other wastes would be absorbed by *Chlorella* algae, as a food. Such *Chlorella* could be separated from their growth medium and then later used as food. Similarly, excess water would be absorbed from the environment (or otherwise collected) and added to the aqueous medium in which the *Chlorella* grow. Some fibrous material which could not be used in this system, would have to be removed, but as this material is removed from the digestive system, additional would have to be added through the ingestion of foods.

Drinking, swallowing, and digestion (including elimination) work satisfactorily in a weightless environment. Simons,[3] who ascended to 100,000 feet in a balloon, achieved a semi-weightless altitude and tested all these functions.

A low residue diet, however, seems to be desirous to cut down on this fibrous waste output. Finkelstein[5] listed certain specific types of food and attempted to make them interesting by variety. These included meat, bread, cereals, cheese, desserts, eggs, fats, soups, strained juices, fruits (canned and peeled peaches, including jellies preferred), fiber-free purees, and in the vegetable class—strained and homogenized tomatoes, carrots, peas, and potatoes.

*Presented at the annual meeting of the Florida State Horticultural Society at Clearwater, Fla., on Oct. 31, 1958.



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When the space traveler attains the altitude of 100 miles (from sea level), there arises the need for additional water and oxygen to be added to the environment. Taylor[4] cites the added need for water, pointing out that the average subject will use 2200 ml. per day. Such water can be included in the diet as a component of the food in pressurized containers; or, if desired, plain water could be provided in much the same manner.

If pure oxygen is used in the sealed-in environment of the space vehicle, flavor becomes a particularly important factor in these foods. Acknowledging that barometric pressure shifts do not cause serious taste desire changes, Finkelstein[5] believes that high oxygen percentages might cause such a reaction. For this reason, through advanced food technology, foods may have to be slightly overflavored, and almost certainly will have to have their flavor especially safeguarded during processing. Finkelstein pointed out that the principal problem in processing space travel foods would be a way of including concentrated foods, sterilized by cold sterilization and packaged under improved methods(preferably in lighter containers than present commercial ones). Research is presently underway to use lightweight aluminum aerosol-packaged foods for just this purpose.

A natural approach to the problem of ingesting foods in a weightless atmosphere could probably be found by feeding through valves and tubes from pressurized containers, which would appear to be generally superior to the squeeze bottles and collapsible tubes currently being tested. The latter are neither magnetic, nor can they offer any guarantee against contamination through drawback of perishable foods. Furthermore, these containers have to be tipped up for use (as in the case of a squeeze bottle) — something difficult to do in a limited space — or manipulated by both hands (as in the case of the collapsible tube).

For the same reason that pressurized dispensers have proved so successful commercially, they should prove successful for space-travel. One immediate aspect of their superiority is that they can disperse, spread, or otherwise deliver a food propelled through special valves. Employing the same principle with a special adapter, they can deliver food directly into the mouth.

Using present knowledge and techniques, many foods can be made dispensible from pressure cans. Graham[8] stated that anything that can be spread, poured, or whipped can be pressure packaged. Consumer acceptability of such products is intensified by their degree of laziness, or their need for such conveniences. Additional points in their favor are the complete elimination of water, and the fact that the package remains sterile throughout its use. There is no spill, waste, air oxidation, possibility of mold growth, and many products do not need refrigeration.

The following is a list of pressurized foods, grouped in classes:

STAPLE FOODS

Butter, Soft-type
Butter, Whipped
Butter, with Cinnamon
Butter, with Honey
Butter, with Maple Syrup
Citrus Concentrates
Citrus Juices
Chocolate Drink
Cocoa
Coffee Concentrate
Cream, Whipped
Cream, Coffee
Cream, Sour (cultured)
French Dressing
Grape Juice
Jams
Jellies
Mayonnaise
Molasses
Oil, Cooking
Peanut Butter
Prune Juice
Syrup, Fruit Drink
Syrup, Ginger Ale
Syrup, Maple
Syrup, Sugar
Syrup, Sugar with Lemon
Syrup, Root Beer
Soups, Clear
Soups, Pureed
Spices, Powdered
Sugar, Powdered
Tea

SPECIALTY MIXES

Batter, Pancake
Batter, Waffle
Batter, Fry-coatings
Cake Frostings
Candy Mixtures
Cheese Spreads
Cheese Dips
Cheese Dressings
Cheese Toppings
Fish Spreads
Fish Dips
Meringue Toppings
Milk Drinks
Topping, Butterscotch
Topping, Chocolate
Topping, Marshmallow
Topping, Mint
Topping, Strawberry
Topping, Vanilla

SAUCES

Barbecue
Catsup
Chocolate
Mustard
Soy
Steak-type
Tobasco
Worcestershire

SPACE-TRAVEL MEAL COMPONENTS

Appetizers, Shrimp Cocktail Mix
Appetizers, Soups
Appetizers, Juices, Mixed
Meat, Barbecued
Meat, Liverwurst
Meat, Smoked
Meat, Stew
Fish, Mixes, flavored
Potatoes, Mashed
Potatoes, Candied Sweets
Vegetables, Pureed
Apple Sauce
Avocado Puree
Fruit Puree
Mango Puree
Dessert Mixes
Bread and Butter Mix
Milk Drinks
Coffee with cream, sugar
Tea with lemon, sugar

SPECIALTIES

Bitters
Ice Cream, soft, chilled
Meat Tenderizer
Smoke Flavor
Vanilla Extract

Naturally, this list cannot be all-inclusive because of the almost daily introduction of new products or new aerosol variations of old products on the consumer market. Also, the research on other aerosol food products throughout the country is considerable.

As might be expected, certain foods may have to be altered in texture, flavor level, formulation, preservation characteristics, moisture content, etc., to be made suitable for pressure packaging. The viscosity of materials such as peanut butter, cheese spreads, molasses, and honey, must be reduced to make them more easy to dispense through present packaging components.

Also, the general texture of the fibrous content or emulsion state of certain foods may have to be altered to prevent them from absorbing atmospheric gases or foaming upon release of pressure. In non-nitrogen

packages, for instance, catsup might come out a pale pink color, slightly bitter in taste. Of course, some of these difficulties can be overcome by altering the valve orifices.

To assist in maintaining absolute sterility in the can, absolutely fresh, top-quality ingredients will be required—particularly in the case of fruits and vegetables—or preservatives may have to be added. In a good many cases, means will have to be discovered to reduce the pH of the primary ingredient to be packaged.

Then too, thickening of the mixture may be required to make it more palatable. In this category would be orange topping or orange dessert.

Very volatile flavors can be added to such products, since they are completely sealed up. Hence, more intense and probably more novel flavors can be achieved with the pressure package. It may be possible to introduce especially volatile flavors under pressure into the can after the product is filled. Esters, "cooling" notes such as lime or mint, can be used; and other light aromatics, normally lost in heat processing, can be put back into the product through the valve.

Foods do not oxidize nor hydrolize readily in nitrogen-filled containers, a factor that should be considered when investigating bland or oil-based foods.

The choice of valve type, be it foam, stream, or spray, naturally depends on the dispensing action desired. As mentioned above, the valve and the propellant system may necessitate reformulation of the product.

Tin-plate containers may be generally satisfactory for certain foods, though the preferred internal lining for pressure packaged foods appears to be special organic coatings, both plastic and inert. Even special hot dipped plate is satisfactory. Congdon[9] expresses an opinion on shelf life limitations on a number of foods pressurized with nitrogen. The findings were the result of a survey made by his company which revealed that such materials as cheese dressings and Worcestershire sauce had an optimal shelf life of between one and

(*Continued on Page 70*)

Gas Chromatograph Used in Propellant Plant

A NEW gas chromatography analyzer that provides a reading every ten minutes to guide operators to efficient, accurate processing of aerosol propellants has been installed at the Calvert City, Ky. "Isotron" plant of Pennsalt Chemicals Corp. For more than six months, a Leeds & Northrup "Chromomax" gas chromatograph has helped Pennsalt engineers reduce impurities. Connected directly to the process stream only a few feet away from the control room, this analyzer is said to provide up-to-the minute purity data and to detect impurity levels as low as 0.01%.

Pioneering in the use of chromatography for component analysis, Pennsalt found that the data from the analyzer enables their operators to reset control points with confidence to consistently produce a product that is better than 99% pure. Confidence in the analyzer data is based on a close comparison—made during the first few months of operation—with a conventional laboratory chromatography analyzer. Analyses checked so closely that no discernible differences could be noted. Now, they check the analyzer against a standard sample just once a week.

The "Chromomax" analyzer consists of three units; a programmer, a recorder, and an analyzer. The recorder, a Leeds & Northrup "Speedomax" stripchart instrument, has a scale graduated from 0 to 100 and can either draw a bar record or a spectrum of the results of the analysis. Functioning of the unit is controlled by the programmer which admits sample streams, advances the detector output through continuously adjustable attenuators and advances the recorder chart 1/10 of an inch between components, and any desired distance between streams.

Housed in an explosion-proof case, the analyzer unit contains a linear valve, temperature controller, column and associated valves and solenoids. The analyzer unit is hanger-mounted at a distance from the recorder and programmer. A modified Wheatstone bridge is used in the measuring circuit with thermal conductivity cells of advanced design as detectors. Stream components separate in the column and appear at the detectors

(*Continued on Page 71*)

In the control room of Pennsalt's "Isotron" plant, operators check component variations on this "Chromomax" analyzer to guide them in resetting process control points. In this way, aerosol propellants are kept more than 99% pure.

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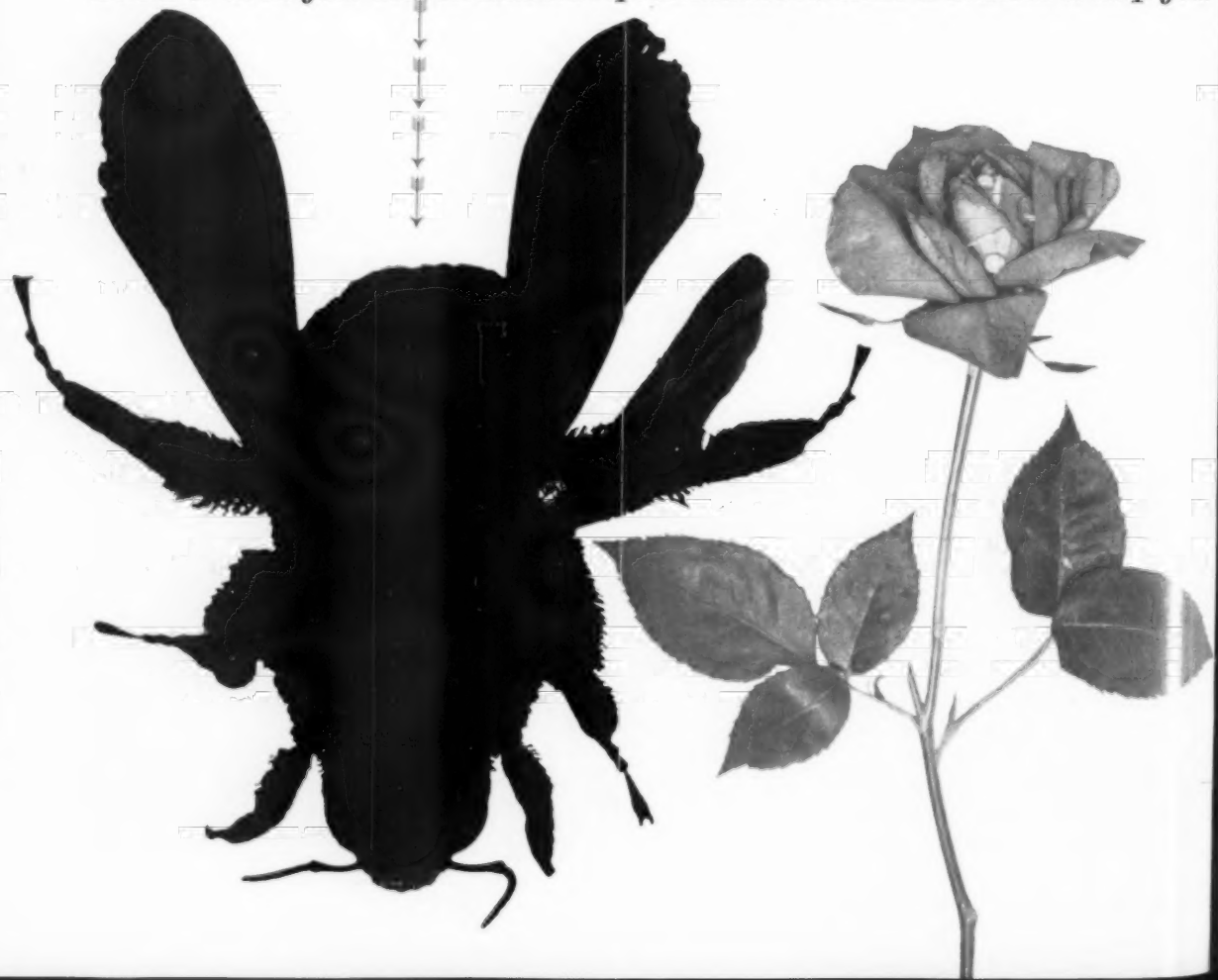

Pink Lace is one of the first cologne mist products packaged in a nylon container. Meri Jo, Inc., Tampa, Fla., is the marketer and formulator, and container decoration was done by the company's art department. Valve is made by Newman-Green and overcap by Risdon.

Mary Chess, New York, has introduced combination packages including aerosol cologne for two of its fragrances. Each unit has a stainless steel inner container and valve. Both containers are made by Flaconette, New York, with metered valves by Valve Corp. of America. Containers and metered valves for both perfume packages are made by Risdon Manufacturing Co. Aero-Chem Laboratories, Inc., Bridgeport custom filler, filled all four packages.

Klean Air, room air sanitizer of Avon Products, Inc., New York, has been introduced in a newly-designed package to accentuate the mint and bouquet fragrances. Can design is by Avon, can by American Can Co., overcap by Sterling Seal, and valve by Valve Corp. of America.

EEZ Acnecare, a medicated foam to treat and mask acne pimples and blemishes, was introduced last month by the Family Products Department of Chas. Pfizer & Co., Brooklyn. Product contains tyrothricin, hexachlorophene, sulfur, resorcinol, zinc oxide, alcohol, and propellant. It will retail for $2.49.

Maskit is a new breath sweetener introduced by Apex Beauty Products, Belleville, N. J. Steel container is by Emson Research and VCA, valve is by VCA, aluminum case by Peerless Tube, brass cap by Metal Fabrications. Old Empire, Inc., Newark, is the custom filler.

NEW PRODUCTS AND PACKAGES

Whipt-Rite, is a new whipped topping packaged for restaurants and soda fountains in the New York area. It is packaged in a 12-ounce lithographed container made by American Can and is fitted with a Precision valve. The unique washable rubber dispensing head imparts a swirl pattern to the product. Wiprite Products, Brooklyn, is the marketer.

Prodent, believed to have been the first nitrogen toothpaste manufactured and sold in Europe, has been introduced to the Dutch and Belgian markets by N. V. Cosmetische Fabriek Prodenta, Amersfoort, Holland. Valve is by Precision.

Ming Jade is Stanley Home Products' entry in the purse-size aerosol perfume field. Metered valve is being made by Valve Corp. of America, outer container by Peerless Tube, and protective cap by Metal Fabrications, Inc. Aluminum outer case has an anodized metallic blue-green finish.

Molylube lubricant, a product of Bel-Ray Co., Pittsburgh and Atlanta, has been introduced in aerosol form for the first time. Product consists of a micro-fine molybdenum-disulfide, with a particle size of less than one micron. It will resist attack by most acids and is said to be an excellent lubricant from —100° to +750° F.

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Consultant's Corner

by Robert A. Foresman, Jr.
Aerosol Consultant
Philadelphia, Pa.

The Role of Perfume in the Successful Aerosol

IT is no secret that to some extent I have been associated with the perfume industry since the very first days of my work as an aerosol consultant, and my respect for the work done by the perfuming industry has its basis in this association. In all likelihood there is no counterpart in modern industrial and commercial activity for the pure creative artistry practiced by perfumer and applied to everyday life. Though I do not have the knowledge to discuss all the nuances of perfumery as they apply to aerosols, I do feel that a few words on the place of perfumery in the aerosol industry may be pertinent.

By their very nature, aerosols must intrude upon our sense of smell, probably more often than upon any other. That a pleasant or unpleasant attitude toward the aerosol can develop as a result of its odor is obvious, or should be. However, time and time again I have seen functionally good products placed on the market with little or no thought given to the effect of the odor.

Insecticides, paints, lubricants, dyes, belt dressings, etc., have a primary function that is other than sensory, and of course the basic odor of such formulations may be unpleasant (or at least unappealing) as originally put together. These products can frequently be considerably upgraded in appeal by proper application of the perfumer's art. Regardless of the approach to odor for this class of products it *is* possible that there will be created a desire to use them—on the part of the consumer — simply by reason of their utility. If this is the case, any odor improvement is a plus and all to the good.

However, for many aerosol products, practically 100% of the appeal is sensory (from an odor standpoint) and any failure in the odor is in fact a failure of the total package. Air fresheners, sachets, closet sprays, and the like in non-personal products and perfumes and colognes in the field of cosmetics for personal use are all examples of this class of products.

Lotions, shaving lathers, hair dressings, etc., are products accepted in type groups by the public, in most cases with the choice between individual brands being directly dependent on a sensory appeal that is more or less *entirely olfactory*. It is not unusual to give samples in this category out for test and have the testing subjects go through the rigamarole of spreading the product, checking it for "slip," consistency, dryness or wetness, etc., and then rejecting or accepting it on the basis of odor! Any formulator can recall instances where odor has been the only thing altered in a product to change it from unacceptable to a premium item.

What all this is leading up to is to point up the tremendous importance of effective handling of fragrance in aerosol products. By "effective," I really mean knowledgeable. The perfume industry has the primary function of handling odor problems—either for the creation of attractive new ones or the overcoming of existing bad ones.

Frequently, my clients, and others concerned with aerosol product formulation and marketing, are inclined to think of the term "effective" (in this sense) as connoting "expensive." It is true that an elegant odor may occasionally seem high in price, but I do not feel that I will alienate anyone in the perfume industry if I say that in any choice of fragrance by a perfumer the matter of price will be considered no more important than any other aspect of the problem.

Naturally, no one wants to spend more money for any part of their product than is necessary. But when the success or failure of a product can depend largely on its odor, it seems to me that any fragrance which develops a strong appeal for the consumer will be cheaper by far than a lower-priced one that is less attractive or perhaps totally lacking in definitive appeal. If your product must compete in the market place on the basis of its odor, it is only good sense to make sure that the odor is the best available for the purpose.

This discussion brings to mind the case of a large, now defunct, cosmetic firm, which either never fully understood this basic premise or forgot it early in its corporate career. The people in charge of the operation were so set in their approach to the problem that they ignored free advice from myself and others that would have corrected their original disastrous approach. At one point, they were also approached by the representative of a perfume company about scheduling reorders for the perfume oil involved in one successful product. Functionally, the product was not really unusual, but principally by its fragrance had developed a considerable amount of consumer appeal. Though this point was not entirely overlooked by the executive involved, when the time came to reorder the fragrance he declared that

(*Continued on Page 73*)

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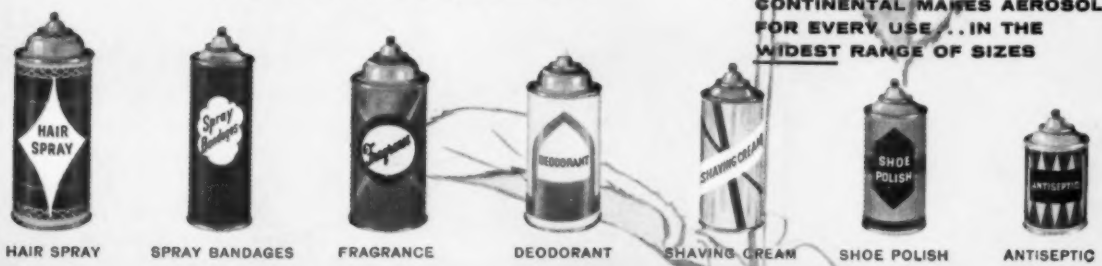

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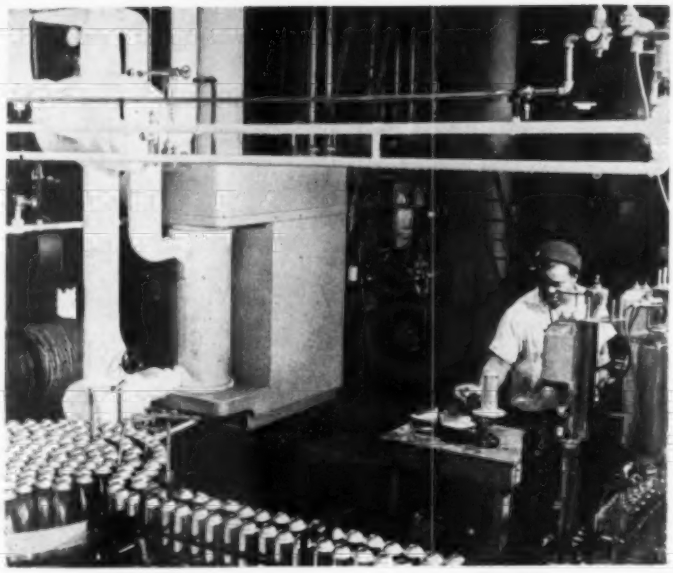

Quick chilling of product by the heat transfer (at left in photo) is the key to high speeds achieved by DeMert & Dougherty's new cold filling line. Heat exchange unit is the first of its kind to be used in the aerosol industry.

Heat Exchanger Feature of New DeMert & Dougherty Cold Filling Line

A NEW method of cold filling aerosol containers is reported cutting costs while increasing production to one container every half-second on the Aeropak line at DeMert & Dougherty, Inc., Chicago. Officials of the firm said the new technique has reduced product and solvent losses and has cut cleanup time when changing aerosol filling lines from one color or product to another. Heart of the high-speed system is a compact ammonia-jacketed "Votator" heat exchanger especially adapted to the continuous chilling and mixing of paints, enamels, insecticides, room deodorants and other products handled by Aeropak.

Believed to be the first such installation of its kind in the aerosol industry, it was developed by engineers of the Girdler Process Equipment Division of Chemetron Corp., New York. The system employs principles that have been successfully used by the Girdler Process Equipment Division in the chilling and processing of foods, chemicals and other liquid and viscous materials.

Paint or other material is pumped from a container continuously through the Votator unit, where it is quickly cooled from room temperature to 0 degrees F. Temperatures are maintained by an automatic recording and control device while continuous mixing of the product is accomplished by a rotating shaft and two rows of floating scraper blades inside the heat exchange unit.

The chilled mixture is then pumped to the filler line which operates at a top speed of 120 containers per minute. The propellant is added and the container is capped. When the contents return to normal temperature, expansion of the gas provides the pressure required for operation.

This system replaces a tubular heat exchanger consisting of 200 to 400 linear feet of refrigerated tubing. The new system has only nine square feet of heat transfer surface compared to about 100 square feet of surface in a conventional tubular heat exchanger. Company officials said that an important advantage of the new unit is ease and economy of cleaning when the system is shut down to change products or to shift from one color to another.

In the previous system all material in the tubular heat exchanger had to be pumped out and the system thoroughly flushed with a cleaning solvent before any change could be made in product or color. All of the product, sometimes as much as 25 gallons, and solvent used during this cleaning operation, were wasted.

The Votator unit, on the other hand, contains only about one gallon of material at any given instant. Losses of product and solvent are therefore greatly reduced.

The new system also maintains high cooling efficiency since the scraper blades rotate continuously inside the heat exchanger unit. This keeps the material flowing in the unit, thoroughly mixes it, and prevents formation of an insulating film on the unit's inner walls.★

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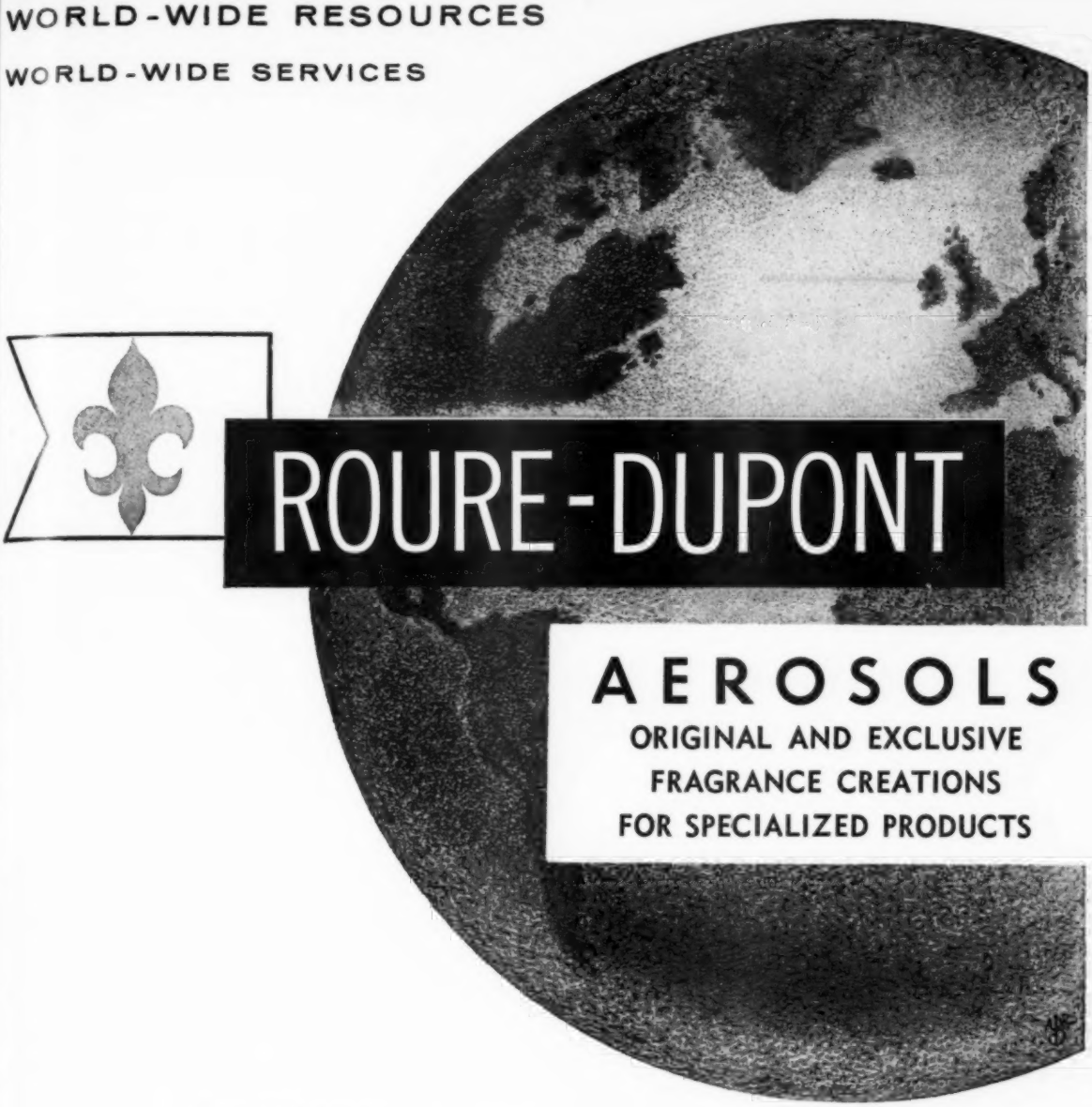

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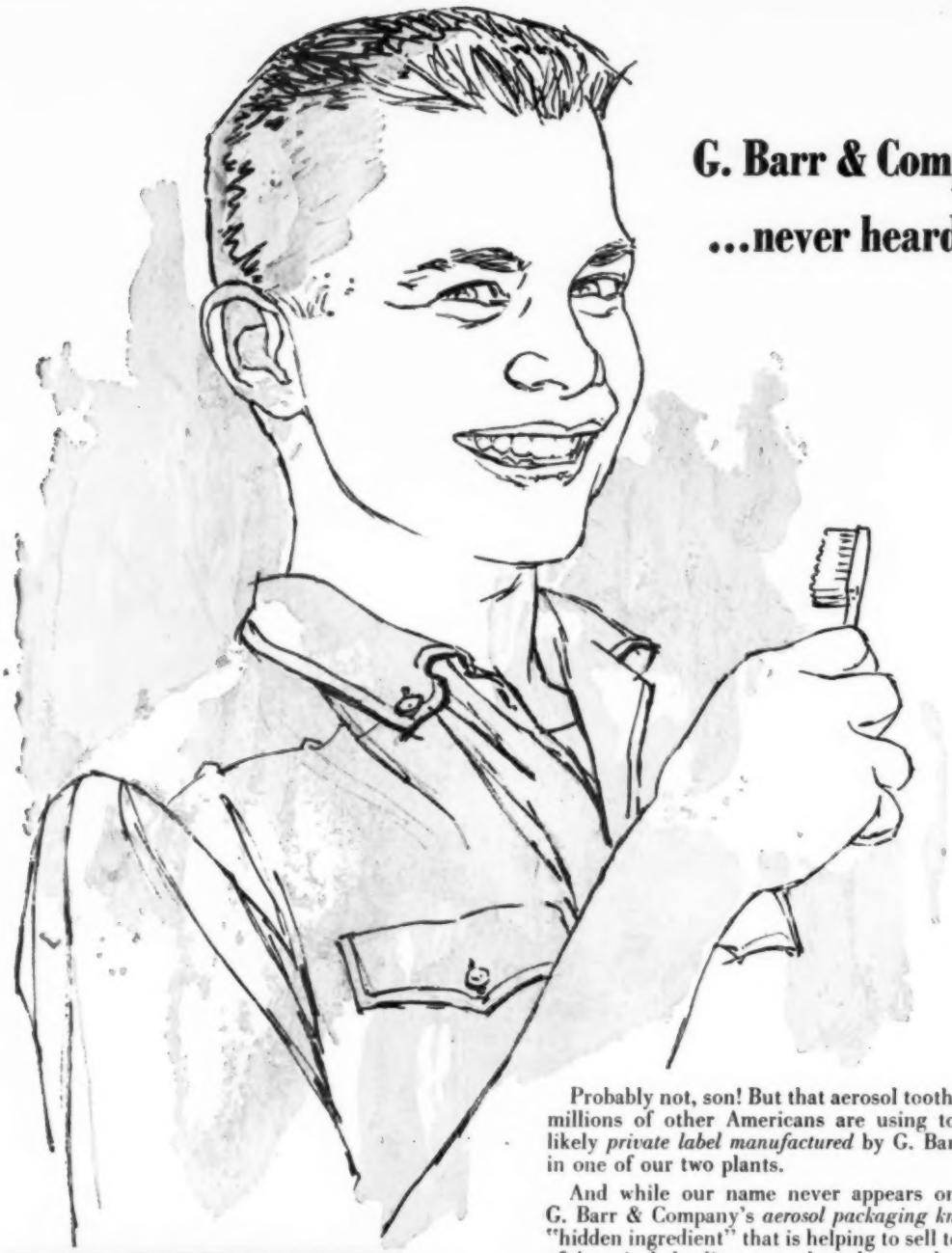

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In this column important aerosol subjects appearing in other periodicals (both domestic and foreign) will be reviewed and summarized. It is felt that this service will enable the reader to keep abreast of most of the significant contemporary articles on the industry, even though they may appear in other periodicals. Since there is a chance that some pertinent articles may be overlooked, it will be helpful if readers will call our attention to any they judge important enough to review.—*The Editor.*

AEROSOLS in review

Colgate Toothpaste Facilities in Britain Increased

A DESCRIPTION of the toothpaste filling operation at the British plant of Colgate-Palmolive Ltd., is included in the January issue of *Packaging News*. The article reports that Colgate's advertising has pushed demand above the capacity of the company's nitrogen filling line, and that the entire line may have to be redesigned to install fully automatic fillers in place of the present hand-fed machines. First change in the line was the installation of an automatic valve clincher made by the Metal Box Co., Ltd.

The article details the toothpaste filling operation this way:

"A 200 gm. charge of toothpaste is dispensed into each open aerosol can from a converted Arenco tube filler, which works by volumetric displacement. Toothpaste of a slightly thinner consistency than the product sold in tubes is filled into a hopper above the filler and is drawn into the bottom of a cylinder as a piston rises. An operator closes the inlet port with a pedal and the piston starts its down stroke to expel the paste into the container below through a non-drip nozzle.

"The valves are placed loosely in position on the containers before they are passed along the in-feed conveyor of the Metal Box clincher. This unit can handle one container a second.

"When each container comes under the clinching head it is held exactly in position under a six-piece collet that grips the concave section of the valve when actuated by the descent of a central plunger. A spring-loaded pressure ring surrounding the collet descends and presses the valve head down onto the rubber gasket between it and the can, at the same time clinching the edges of the valve assembly round the top of the can. Then the jaws and ring withdraw and the table indexes round to the next position.

"The containers are then filled with compressed nitrogen on a Druk-Pak machine. A pedal controls the 40 psi air supply that operates the equipment. Nitrogen is piped to the unit from a reducing valve adjusted to give the required 100 psi pressure in the containers, by equalization.

"When the operator depresses the pedal the gassing head descends, opening the valve by forcing it downwards. After pressure charging, each aerosol container is allowed to stand for one hour before the pressure is checked. A leak would not necessarily produce bubbles in a water-bath test and would be difficult to detect if only toothpaste was expelled and washed away. Instead, a hand-operated pressure gauge is used."

•

A GENERAL round-up of aerosol articles comprises one section of the *1959 Modern Packaging Encyclopedia Issue*, released early last month. Though much of the material is a summary of previous material in this and other trade publications, some of the general predictions are worth quoting. For instance:

"It is logical to assume, that more of the smaller containers will appear: (1) because they lend themselves to certain more dainty products and (2) space in the medicine cabinet is at a premium."

Walter C. Beard, Jr. of Risdon Mfg. Co., writing on aerosol valves, predicts that soon valves will be developed for sealing by spin welding techniques to join the valve to plastic aerosol containers by means of frictional heat. "Other new developments to watch for — and some of these are now enjoying success—include: (1) valves mounted directly in the can lid and thus eliminating the extra cost of the mounting cup for certain products; (2) valves that will function both upright and inverted and produce, as needed, either a fine or a wet spray; (3) more uses for metering valves; (4) spray nozzle extensions for hard-to-reach application; (5) continued gains in styling and design.

"The most significant new development, however, is the progress being made in producing valves of uniform high quality. Excellent performance can be expected if careful study is given to the basic problems in valve design. Dependable operation takes precedence over every other consideration in valve procurement."

Cost estimates for pressure filling equipment are included in an article titled 'Successful Pressure Filling" by Paul M. Woessner and Peter J. Rosauer, of Alpha Engineering Works. They write:

"There are several choices where pressure-filling lines are concerned.

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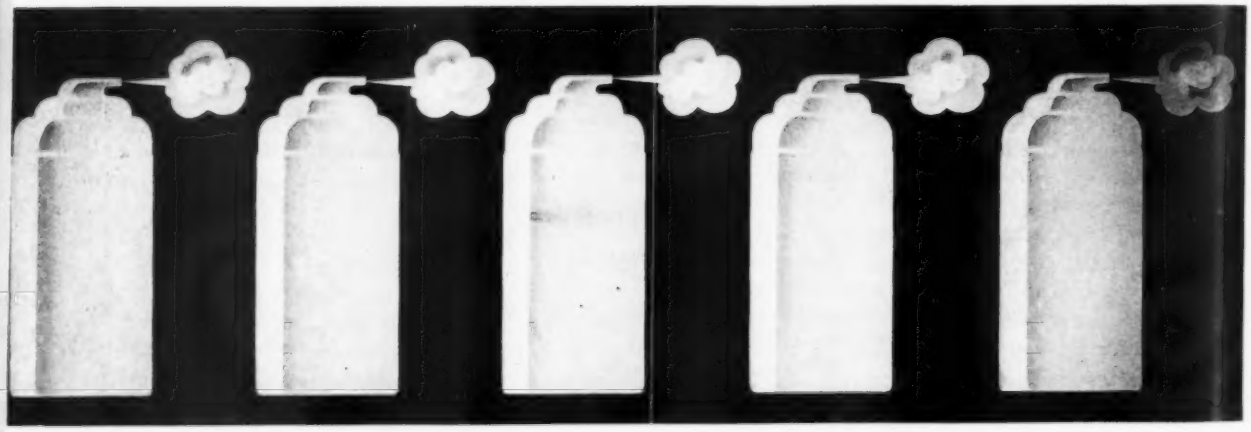

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Table model equipment will permit a production speed of 15 to 20 aerosols a minute. The basic pressure-fill unit will cost somewhere in the neighborhood of $5500. A single-line automatic installation will produce about 30 aerosols a minute and the pressure-fill unit will cost $7000 to $8000. A twin-line automatic installation has a production speed of about 60 units a minute, and the pressure-filler will cost in the vicinity of $13,000 to $14,000. Product fillers, crimpers, air compressors, vacuum pumps, and hot-water test tanks represent additional items of cost.

"The rotary automatic line will produce 120 units a minute. The pressure fill unit will cost about $22,000 to $23,000. The product filler, $9000 to $10,000. A vacuum crimper will cost $10,000 to $11,000; a vacuum pump, $800 to $900; and a hot water test tank, $7500 to $8500. Thus total cost of this high-speed line will be in the neighborhood of $50,000."

•

IN the third and final installment of his continuing series on "The Formulation of Aerosols" in the November issue of the British trade publication, *Chemical Products*, J. H. Briston devotes a considerable portion to sample formulations for a whole series of articles. Packagers in this country will probably find most interesting some of his remarks about pharmaceuticals.

Writing about asthmatic sprays, he declares:

"Sprays for the relief of asthmatic conditions may be based on the drugs used in normal practice in rubber air-bulb atomizers. Among them are the vasoconstrictive amines such as adrenaline, isoproterenol, epinephrine, etc., and their acid-addition salts. Cortical steroids have also been used for these conditions. Owing to the low solubility of such drugs in the propellants, the use of co-solvents is mandatory, the ones of greatest practical importance being ethanol, chloroform, diethyl ether, and mixtures thereof. Stabilizers and antioxidants may be incorporated, suitable additives include ascorbic acid, sodium bisulphite, and butylated hydroxytoluene. The propellants in general use are dichlordifluoromethane, and dichlorotetrafluoromethane. The actual choice of propellants is governed by the pressure required, and this in turn is governed by the container used. If a plastic coated glass bottle is preferred, then pressures should not exceed 25 to 30 psig, but higher pressures (and hence better atomization) are possible with metallic containers such as stainless steel."

Several specimen formulations for asthma aerosols are given in an Australian Patent. A few examples of these are:

	w/w
Isoproterenol hydrochloride	0.25%
Water	1.50%
Ethanol (absolute)	33.25%
Dichlorodifluoromethane	65.00%
As for the previous formula but propellant consisting of	
Dichlorodifluoromethane	25%
Dichlorotetrafluoroethane	40%
	w/w
Epinephrine, U.S.P.	0.25%
3N solution of hydrochloric acid	0.50%
Ascorbic acid	0.15%
Water	1.00%
Ethanol (absolute)	33.10%
Dichlorodifluoromethane	25.00%
Dichlorotetrafluoroethane	40.00%
	w/w
Ephedrine	15%
Ethanol (95%)	26%
Dichlorodifluoromethane	59%

After briefly discussing anti-spasmodics, antibiotics, and other miscellaneous pharmaceutical applications, Mr. Briston gives an excellent summary of some of the possible defects which might be encountered in aerosol paint performance:

Cratering. Although the propellants are liquefied gases, a time lag exists between their exit from the valve and their total evaporation. It is thus possible for residual propellant to be entrained in the emergent spray and for it to reach the object being painted. If this does happen the propellant will boil off on impingement and will cause cratering of the film. One solution would be to use a more volatile propellant while another would be to reduce the viscosity of the formulation. If it proves impossible to prevent propellant reaching the target, then the problem may be tackled by increasing the amount of high boiling solvent, thus allowing greater time for the imperfections to flow out.

Sagging. Care must be taken to avoid too high a proportion of high boiling solvents otherwise the amount of flow may be so great as to cause sagging of the film. This fault may also be caused by over-spraying.

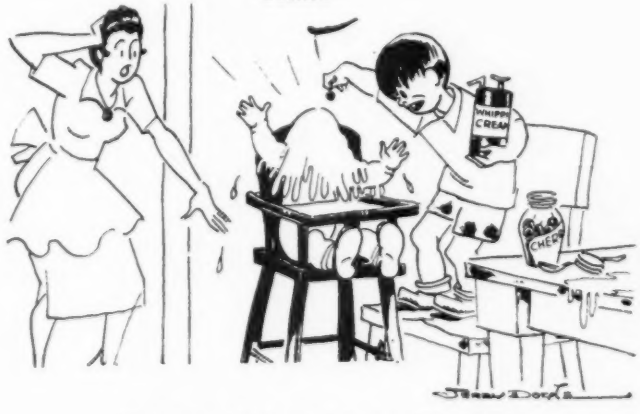
Orange Peel. The defect in the dried film known as "orange peel," is due to too high a proportion of low boiling solvents which thus prevents the coating from flowing out sufficiently.

Blushing. The evaporation of the propellant and low boiling-point solvents causes a certain amount of cooling with consequent condensation of atmospheric moisture on to the paint film. Its effects may be minimized by the incorporation of water-miscible solvents. Another way of tackling this problem is to reduce the amount of cooling by using higher boiling point solvents.

Lifting. If more than one coat of lacquer is applied, it will often be found that lifting of the first coat occurs when the second one is applied. This is because of the high proportion of true solvents present in the formulation. If low covering power makes it necessary that more than one coat should be applied, then the solvent balance must be adjusted to reduce the solvent power so that it is no greater than is absolutely nec-

(Continued on Page 72)

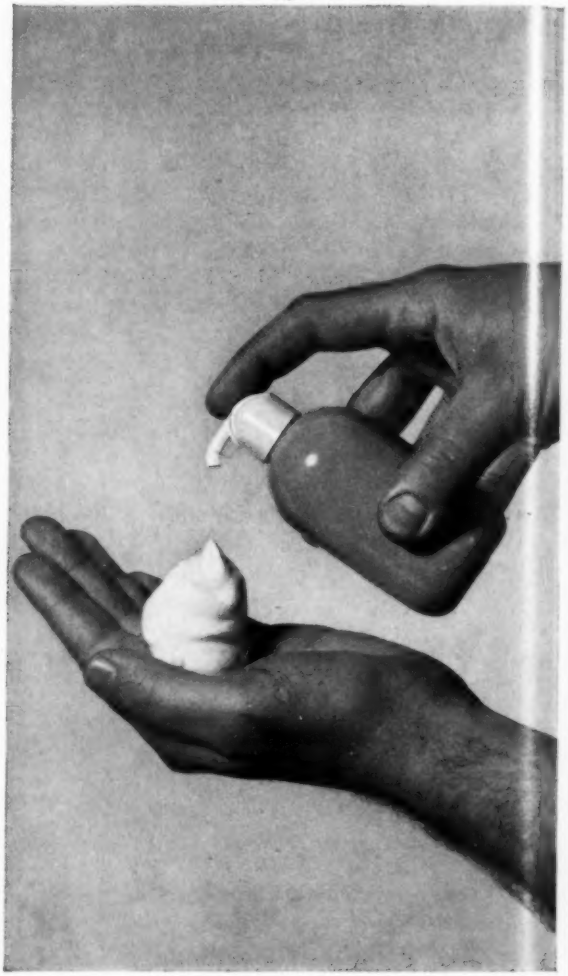
"CORKY"



"So now you don't wanna be a vanilla sundae!"

(From *The Crown*)

Announcing new

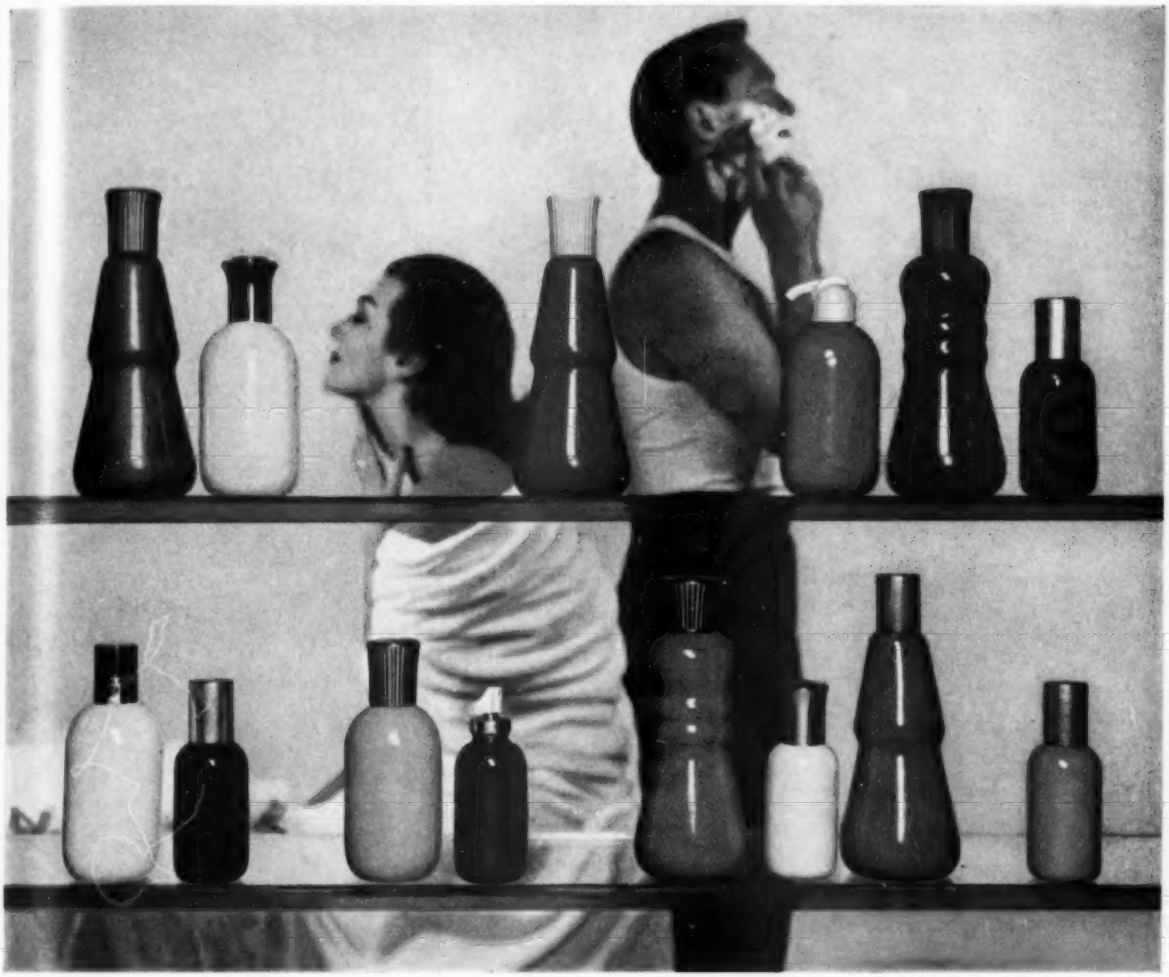


These plastic-coated glass containers

The wide range of colors are eye-catching on store shelves, attractive in the home.

Owens-Illinois plastic-coated glass packages are the ideal containers for a growing number of products.

Owens-Illinois Pressure Packages



combine convenience and product protection

These new Owens-Illinois plastic-coated glass packages give your pressure-packed products the protection which only *glass* can provide.

These convenience packages are the result of careful research, engineering, and design by Owens-Illinois who is ready to supply technical help in the packaging of *your* product.

Brilliantly dressed in a wide range of exciting colors and topped with handsome caps, Owens-Illinois plastic-coated glass containers can be decorated with any design to create eye-catching, sales-building packages.

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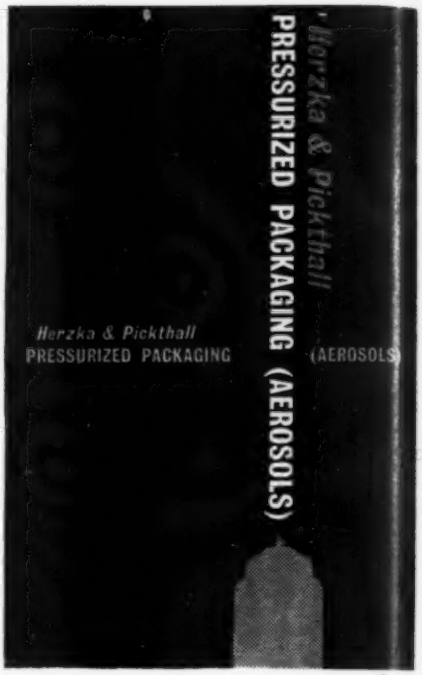
GENERAL OFFICES · TOLEDO 1, OHIO

Book Review

First Aerosol Technical Book Published by Two Britons



Pressurized Packaging (Aerosols), by A. Herzka and J. Pickthal. Published by Butterworths Publications, Ltd., London: and Academic Press, Inc., New York: 411 pages, $12.

IT IS always a special event when a technical book about a new industry is published. It tends to give that industry an aura of maturity, permanence, and stature, and at the same time provides the newcomer to it with a solid, dependable source to which he can refer for all phases of that particular industry. To say that the aerosol industry has long needed such a book is an obvious understatement, since the neophyte in pressurized packaging has too often either been left strictly to his own devices, or has had to track down widely scattered technical articles in a whole series of trade magazines. The many technical booklets published by suppliers, and the technical assistance offered by their laboratories, have all been invaluable. But the fact remains that a good definitive book about aerosol packaging has been badly needed for at least the last four years.

A. Herzka, of the Research Department of The Metal Box Co., Ltd., London; and Jack Pickthall, chief chemist of Polak & Schwarz (England) Ltd., Enfield, Middlesex; have taken upon themselves the monumental task of writing such a book. Both these gentlemen are fairly well known to U. S. aerosol people, since Mr. Herzka is a regular contributor to *Aerosol Age* and Mr. Pickthall, a regular columnist in *American Perfumer*. In addition, Mr. Pickthall is well known among technical people in this country as being the most vociferous opponent of the use of uncoated glass as an aerosol container material. Both the men are well known in Europe for their talks before packaging, cosmetic, and similar groups. So much for their qualifications, now to the book.

Logically enough, the book is organized into chapters dealing with propellants, containers, valves, filling methods, laboratory procedures, emulsion systems, and perfumes. Each is liberally illustrated with graphs, charts, and some excellent photographs, and each contains a separate reference listing to enable the reader to further explore specific subject material. And in this reference is something not usually included: a listing of especially significant British and American patents.

In using these valuable sources, however, one possible shortcoming should be kept in mind. The bulk of the book was written and compiled during late 1957 and early 1958, so that a good deal of the data is necessarily at least six months old. For this reason such fairly recent developments as the nitrogen package, the metered valve, and similar devices are not given as much weight as would have been warranted had the book been edited at a later date. This, of course, does not detract at all from the general body of information contained within the covers of the volume, which is excellent indeed.

In fact, it would be difficult *not* to get overly enthusiastic about the book. It is printed on fine paper, the diagrams and photographs are excellent, and the text is concise and well written. Each subject is gone into in great detail, and the cover claim that the book "not only summarizes the various difficulties likely to be encountered but also indicates how they may be overcome," is indeed substantiated.

Used as a reference alone, the book is well worth the price. More than 200 formulas are included, ranging from insecticides, cosmetics, paints, and similar well-established products to newer ones like foods and perfumes.

(*Continued on Page* 70)

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NEWS of Pressure Packaging

DeVera Joins Fluid Chemical

A. T. "Gus" DeVera, Jr., has been named district sales manager by Fluid Chemical Co. Newark, N. J. custom filler. He will be responsible for development of new accounts for contract aerosol and liquid packaging.

A graduate of Seton Hall University, Mr. DeVera was previously associated with Celluplastic Corp. of Newark, as assistant sales manager, and more recently was Eastern sales manager of the American Plastic Corp.

•

Aluminum Signs New Pact

Aluminum Ltd. of Canada, Montreal, and Fabrique d'Emballages Metalliques, Fribourg, Switzerland, the leading manufacturer of aluminum cans in Europe, last month announced that they are merging their common interests in the aluminum can market in Europe and overseas. Under terms of the agreement, Aluminum will acquire one-third of the shares of F.E.M. through a 50% increase in that company's capital.

The two companies will share their knowledge and experience in aluminum can making to jointly promote the greater use of the metal as a container material. F.E.M. last year produced 60 million cans from its plants in Switzerland, France, and Holland. Included in its line are various size aerosol containers.

•

Pace Moves To New Quarters

Ira A. Wolfson, president of Pace, Inc., contract and aerosol packagers, last month announced the company's removal to new and enlarged quarters. The manufacturing and packaging facilities will be located in Building 1114, MacArthur Road, New Castle County Airport, Wilmington, Del. General offices will be consolidated at this address as well.

As a result of the move, Pace, Inc., now occupies one of the largest aerosol packaging plants in the Delaware Valley, embodying every modern improvement in plant design . . . complete sanitation, full quarry tile floor, completely explosion-proof area, extensive warehousing and shipping facilities, and a foolproof system of quality control. Through use of the new facilities, the company's chemical engineering staff will develop formulations, adapt their own tested formulas to individual needs, supply package design, market analysis and sales potential research, merchandising assistance and expert technical services on all phases of pressurized dispensing and bulk packaging.

Pace's expanded control laboratory will allow for greater research projects and product development and will enable its staff to evaluate and adopt newly-developed techniques in the field of pressurized dispensing.

Pace's new plant was officially opened at ceremonies held on Jan. 30.

•

Thomasson Names Bagenstose

David R. Bagenstose, vice president and general manager, has been elected to the board of directors of Thomasson of Pennsylvania, Inc., Norristown, Pa. custom filler.

Norwegian Filler Visits U.S.

Harry Holm, president of Aerosol Fylling, Oslo, Norway, left the U.S. late last month after a visit that lasted nearly a month. While here he visited filling plants, marketers, and suppliers in the East and the Midwest.

Mr. Holm's firm is the only custom filler in Norway, and also maintains a plant in Copenhagen, Denmark.

(Some of his views on current aerosol filling problems in Norway, and on the history of the industry there will be incorporated in an article in the March issue of *Aerosol Age*. The aerosol is commonly credited with having been conceived in Norway in the 1930's).

•

Burke Leaves Tube Manifold

Richard F. Burke, sales manager of Tube Manifold Corp., North Tonawanda, N.Y., resigned from that company late last month. He had held the position of sales manager since the latter part of 1956.

Mr. Burke has announced plans to form a new sales organization, in the Buffalo area, to specialize in the aerosol and refrigeration fields.

Acrolite Announces New Expansion, Appoints Wallace

Acrolite Products, Inc., West Orange, N. J., private label and custom filler specializing in lacquer paints, has announced plans for a new expansion of its filling lines. W. F. Wallace, aerosol engineer and former president of the Wallace Engineering Co., has been appointed to direct and develop these new lines.

Included in the expansion is the installation of a special aerosol matching paint department, aimed at developing the company's business among original equipment manufacturers. Plans also include increased private label manufacturing of all aerosol products, including special acrylic-lacquer paints in 16-ounce containers.

Acrolite is currently in the process of relocating its plant and sales office. A new laboratory and quality control installation will be added, and an entirely new line of acrylic lacquers is expected to be produced and marketed in 1959.

Mr. Wallace, who will direct the expansion, was formerly president and general manager of Products Manufacturing Co., an aerosol filler, and prior to that was president and general manager of Emco Machinery Co.

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SPECIFICATIONS		
Contents	10 cc	10 cc
Height	2½"	3"
Diameter	½"	⅞"
Cartridge	Stainless Steel	Glass
Finishes	Polished Brass, Textured, Brushed, Enameled, Silk Screened, Debossed, Embossed or to your specifications.	

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Aerosol in Bomb Incident

An aerosol cologne spray unit was involved in a suspected bomb incident in Milwaukee, Wisconsin, just before Christmas.

A Milwaukee postal clerk, sorting Christmas mail, noticed a package ticking and vibrating. He called police who took the package to a local park and then diverted traffic from one of the city's chief thoroughfares for the next 20 minutes. The package was X-rayed, and two strange looking objects were picked up.

The package was then taken to the lake front and an army bomb demolition team from Fort Sheridan, Ill., plus members of the FBI and Chicago police bomb experts were all summoned to dismantle the package.

The mysterious package contained nothing more than an aerosol cologne package and a battery-operated manicure set, intended as a Christmas gift from the Muhk Chemical Co., Chicago to a Milwaukee hotel manager. The ticking and vibrating was caused by an accidental turning on of the manicure set.

The package was later delivered to the addressee.

•

Allied-FMC Joint Operation

The Allied Chemical Corp. and the Food Machinery & Chemical Corp., both of New York, have announced a joint plan for production of carbon tetrachloride and carbon bisulfide at FMC's South Charleston, W. Virginia plant. Carbon tetrachloride is used by Allied's General Chemical Division in the manufacture of its "Genetron" aerosol propellants.

•

Purdue Packaging Course

Enrollments are currently being accepted for the Purdue University "Industrial Packaging Short Course," a two-week course in general packaging subjects scheduled to begin Monday, March 2nd. Included among the subjects to be given in this year's course are "Mechanization of Packaging Operations," Microbial Problems, Statistical Quality Control," Corrosion and Deterioration," etc. Inquiries should be directed to the Comptroller's Office, Adult Education, Purdue University, Lafayette, Ind.

•

Odell Forms New PR Firm

Norman Odell, formerly vice-president in charge of public relations for G. M. Basford Co., recently resigned from that firm to form his own firm to handle public relations for business, industry, and science communications. Called Norman Odell Associates, Inc., the new firm is located at 630 Third Avenue, New York 17.

Mr. Odell, while with Basford, administered the publicity program of the CSMA's Aerosol Division. He joined Basford in 1953 as manager of its public relations department, and was appointed vice-president in 1957. Prior to his association with Basford, he was with the public relations department of Cunningham & Walsh, Inc., and previously was an editor with McGraw-Hill Publishing Co.

•

Anaconda in Aluminum Field

The Anaconda Co., the leading producer of copper in the U.S., last month announced plans for more vigorous participation in the U.S. aluminum market, to include fabrication of extrusions, containers, and other such commercial products. In a sweeping organizational expansion of its wholly-owned subsidiary, Anaconda Aluminum Co., two other subsidiaries, American Aluminum Co. and Cochran Foil Corp., have been merged into a single organization called Anaconda Aluminum Co.

Executive offices for Anaconda Aluminum Co. will be located at Louisville, Ky. Archie P. Cochran, president and founder of Cochran Foil Co., was elected president of Anaconda Aluminum, which will produce aluminum from a plant at Columbia Falls, Montana, with a rated annual capacity of 120 million pounds. The company's fabricating mill is a $40-million unit at Terre Haute, Ind.

•

Shepherd's Aerosols Moves

Shepherd's Aerosols, Ltd., manufacturers of "Aerovap" electric aerosol insecticide dispensers, recently moved to larger quarters at Shernfold Park, Frant, Tunbridge Wells, England. Sales offices will continue to be maintained at Old Burlington Street, London W.1.

Marchese to Shulton Post

The appointment of Emil Marchese as a sales supervisor for the consumer products of its Fine Chemicals Division has been announced by Shulton, Inc., New York.

Mr. Marchese will be responsible for sales of consumer chemicals (including the well-known Bridgeport "Aer-a-sol" line recently acquired by Shulton, Inc.) in the Southeast and will make his headquarters at the Shulton offices in Atlanta. Prior to joining Shulton, Inc., he was a regional sales manager for Whitehall Laboratories.

•

Houbigant Reshuffles Execs

Houbigant, Inc., a leading aerosol perfume marketer, last month announced a realignment of its executive personnel. Key change is the election of Andre Wick as chairman of the board of the three Houbigant companies, Houbigant, Inc., Houbigant Sales Corp., and Cheramy, Inc. He had been president of all three companies.

Jacques Manoha is new president of Houbigant, Inc., and of Cheramy, Inc., and Gerard Bungener was named president of Houbigant Sales Corp. Pierre Harang, a vice-president of Houbigant Sales Corp., has been named vice-president of the other two companies as well. V. Vassilief, treasurer, was elected a vice-president of Houbigant Sales Corp.

•

A. H. Wirz Names McAfee

Daniel B. McAfee, formerly New England district manager for the Plastics and Resins Division of American Cyanamid Co. has joined A. H. Wirz, Inc., Chester, Pa., as vice president in charge of sales. At the same time the company announced the appointment of Robert Mahan, vice president and general manager of the Wirz plant at Carrollton, Ky. as vice president in charge of operations.

•

Germaine Monteil Moves

Germaine Monteil Cosmetiques Corp., New York aerosol marketer, has moved to new quarters at 730 Fifth Avenue, New York 19. The new telephone number is JUdson 2-3011.

New Marketing Co. Organized in Chicago

A NEW company has been organized in Chicago to market pressurized products in the veterinarian, chemical specialties, cosmetics, household, drug, and food specialties fields. Called Lora, Inc., the company has taken over the product line and assets of La Bora, Inc., whose dog deodorant won the 1957 CSMA Aerosol Packaging Award for best package in the "Other Household Products" category.

Lora, the new company, is headed by Dr. Emery D. Robert, who, as an aerosol consultant, helped La Bora formulate and package the first "Dogette" product. Now, the "Dogette" line has been expanded to include a flea killer and coat conditioner and a dry shampoo. All three of these products utilize the award winning black-on-white design, which features a black French poodle just over the name "Dogette." The line of dog and pet products is expected to be considerably increased during 1959, with two additional products scheduled for introduction within "a matter of months."

Introduced within the last few months were two non-pet products: "Kloze Fresh," a spray to eliminate and prevent perspiration, musty, smoke, and other odors from clothing, and "Foot Pal" a deodorant foot powder that contains hexachlorophene to cool and refresh tired feet. Both these products will retail at $1.25, and both these and the "Dogette" line will be sold in department, drug, and food stores, as well as supermarkets and pet shops.

Compressed Gas Group Elects

The Compressed Gas Association, a trade association representing compressed gas producers and dealers, last month elected Claude E. Monlux president at its annual meeting in New York. Mr. Monlux is a vice president of the Linde Co. Division of Union Carbide Corp., New York, a producer of nitrogen propellants for the aerosol industry.

•

Penick Names MacDonald

John H. MacDonald was recently appointed plant superintendent for the Lyndhurst, N. J., plant of S. B. Penick & Co., New York. He has been a member of the plant technical staff since he joined the company a year ago.

The position of plant superintendent was held by Edward Lucas until his death in 1957. After Mr. Lucas' death, Charles M. Hogate, chief industrial engineer, served with the dual responsibility of acting plant superintendant.

Mr. MacDonald brings to his new assignment wide experience in the chemical industry, having been associated with Merck & Co. in various administrative and technical positions for over 20 years. Immediately before joining Penick, he served as plant manager for the Nepera Chemical Co. at Harriman, N. Y.

•

Revlon Names Ad Agency

Revlon, Inc., New York, has named C. J. LaRoche & Co., New York advertising agency to handle its "High Gloss" hair spray, "Sun Bath," "Baby Silicare" and a number of other products. LaRoche is currently handling the company's "Intimate" aerosol perfume line.

Alpine Aromatics Appoints 2

Benjamin S. Young and F. R. Carroll have been appointed sales representatives for Alpine Aromatics, Inc., Metuchen, N. J., producer of aromatics and essential oils.

Mr. Young was formerly associated with Camilli, Albert & Laloue, Inc. and more recently with American Aromatics. In his new position he will be responsible for the firm's sales of fine perfume specialties and compounds.

Mr. Carroll was formerly with Rheem Manufacturing Co. and will be primarily responsible for sales of industrial and non-cosmetic odorants.

•

Krylon Appoints Kayser

Elmore E. Kayser has been appointed vice-president in charge of advertising and promotion for Krylon, Inc. Norristown, Pa., marketer of spray enamels. For the past five years he was advertising and promotion manager.

•

International Aerosol Group

The European Federation of Aerosol Associations, a loosely knit union of West European aerosol associations, will hold its first meeting June 26 in Paris. The meeting will be held in conjunction with the International Congress of the Chemical Industry.

The new federation is the result of talks conducted by the heads of the three principal regional associations (the International Aerosol Association, Interessengemeinschaft Aerosols, and the Comite Francais des Aerosols) held in Paris last October. It will be directed by a board of directors made up of the various association presidents, together with representatives of the industry from Spain and Italy, and Great Britain.

•

Ruth Kitchen Leaves D&O

Ruth Kitchen, advertising manager of Dodge & Olcott, Inc., New York, for the past eight years, retired from that company to work from her home as an advertising consultant and editor of the D&O News, the company's external house organ. She will be replaced at D&O by her assistant for the past two years, Gloria Pages.

Williams to G-D Chicago Post

As a step toward his retirement, Dudley F. Lum has relinquished the duties as manager of the Chicago branch office of Givaudan-Delawanna, Inc. and its associate companies,

R. L. Williams

D. F. Lum

Givaudan Flavors, Inc. and Sindar Corp. Robert L. Williams, who has been associated with Givaudan since 1948, has been appointed to succeed him in the duties of manager of the Chicago branch office.

Mr. Lum, who has been manager of the Chicago office since 1927, is a well-known figure in that area, and he will continue to personally serve his old customers in the territory. He has been associated with the sale of Givaudan products and with the aromatics industry for over 50 years.

Mr. Williams is a graduate of The College of the City of New York, where he received the BS degree in chemistry and physics. He has been active in both the Cosmetic Industry Buyers and Suppliers Association and the Salesmen's Association of the American Chemical Industry, having been a director and committee chairman of both.

•

Canners Announce Program

Current problems of production, processing, and marketing will highlight the program of the National Canners Association as that group holds its 52nd annual convention Feb. 21-23 at the Conrad Hilton Hotel in Chicago. Heading the list of speakers is the Honorable Sigurd Anderson, Federal Trade Commissioner, who will speak on the FTC's activity in the food industry.

Other attractions are to be presented in either special sessions or luncheon programs. Special sessions are scheduled for the following subjects: "New Containers and Container Problems," "Multiple Packaging of Canned Foods," "How to Increase Marketing Efficiency," plus three "Raw Products Sessions."

•

Heyden Newport Buys Strobane

Strobane, a terpene-based insecticide, has been purchased by Heyden Newport Chemical Corp., New York, from the B. F. Goodrich Chemical Company.

Heyden Newport will have all rights to manufacture and sell Strobane, which possesses a broad range of activity in the control of agricultural and livestock pests. Described as effective against flies and other pests, insecticides containing "Strobane" are currently on the market in liquid and aerosol formulations for home use.

"Its promising performance, combined with our basic position in terpene chemicals, points to an important role for Strobane in our expanding agricultural chemical program," said S. Askin, president of Heyden Newport. Full commercialization for large-volume pesticide applications is planned, he said, upon successful completion of field studies to be made in 1959 in cooperation with federal, state and local agricultural agencies.

•

Powers Speaks to N. Y. SCC

The importance of accurate laboratory testing as a means of measuring the salability of a cosmetic product cannot be overstressed, Dr. Donald Powers, director of toiletries and cosmetics research at the Warner-Lambert Research Institute, told a Jan. 7 meeting of the New York Chapter of the Society of Cosmetic Chemists. Revealing that too many companies have baseless claims by which they expect their product to sell, he pointed out that actual performance tests are the only valid way of arriving at marketing claims.

•

Solvay's Gordon Retires

Lester B. Gordon, vice-president of the Solvay Process Division of Allied Chemical Corp., New York, retired Dec. 31 after more than 40 years with the company.

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Shulton Appoints Tyrol

The appointment of William Tyrol as a sales supervisor for the consumer products of the Fine Chemicals Division of Shulton, Inc., New York, was announced early last month.

He will be responsible for sales of consumer chemicals (including the well known Bridgeport "Aer-a-sol" line recently acquired by Shulton) on the West Coast and will make his headquarters at the Shulton offices in Los Angeles. Prior to joining Shulton, Inc., he was Western food chain manager for International Latex Corp., and before that was Western regional manager for Whitehall Laboratories.

•

Air Reduction Names Lenhard

R. E. Lenhard, executive vice-president of Air Reduction Sales Co., the industrial gases and welding products division of Air Reduction Co., New York, has been appointed president of that division. He succeeds J. H. Humberstone who, as vice-president of Air Reduction Co., will devote full time to corporation affairs.

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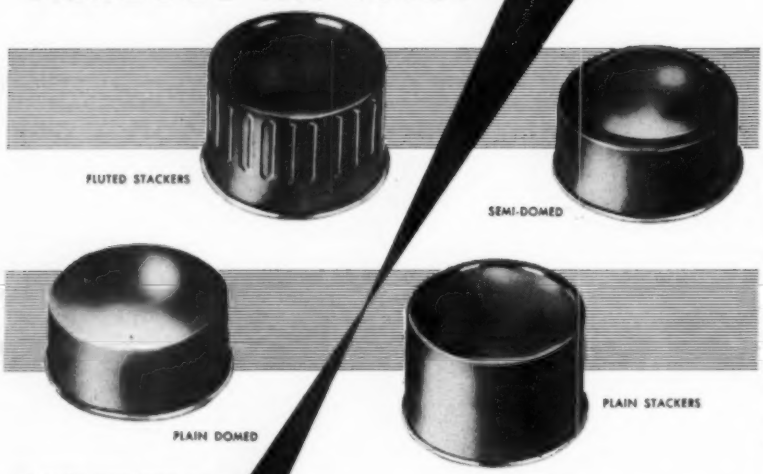

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Sugden Speaks to Merchandisers

Jack W. Sugden, vice president and director of marketing for B. T. Babbitt, Inc., a leading aerosol marketer, last month told a meeting of the Premium Merchandising Club that his company has signed "Buy Three — Ride Free" agreements with transit authorities in New York, Philadelphia, Boston, Detroit, Cincinnati, Pittsburg, and Miami. Similar agreements, which enable the consumer to buy three Babbitt products and then use coupons for rides on the city's transportation system, are being negotiated in Milwaukee and Cleveland.

Mr. Sugden laid down the following "ground rules" for intelligent premium campaigns:

1. The premium must either have a valid utilitarian value or must be so unique that it creates immediate desire.
2. It must have an association with the product.
3. Exaggerated prices placed on premiums may tend to discourage potential buyers of the product.
4. The program should be adequately advertised and researched.
5. The premium shouldn't be allowed to hog the product's label, that is, to crowd necessary information that will bring future sales.

•

Cons. Pkg. Names Scanlon

Jerome L. Scanlon has been appointed sales manager of Consolidated Packaging Machinery Corp., Buffalo, N. Y. He was formerly a sales representative for Horix Manufacturing Co. of Pittsburgh.

Assisting Mr. Scanlon will be Alide J. Champagne, who will be responsible for bag closer and sewing head sales. He is a former member of Consolidated's engineering department.

•

Riker Moves to New Plant

Riker Laboratories, Inc., pioneer developer of aerosol pharmaceuticals, has moved its headquarters to a new plant at Northridge, Calif. The new plant is located in a rural area of the San Fernando Valley.

N. Y. SCC Elects Ostrowski

Theodore Ostrowski, chief chemist at the Monteil Manufacturing Co., was installed as 1959 chairman of the New York Chapter of the Society of Cosmetic Chemists as that group recently held its year-end meeting. Other officers elected to serve the New York Chapter during 1959 were chairman-elect, John Longfellow, Colgate-Palmolive Co.; secretary, Saul Bell. Prince Matchabelli; and treasurer, Martin Katz, Revlon, Inc.

At the same meeting three past chairmen of the chapter were presented with plaques in recognition of their services, guidance, and leadership. The recipients were: Michael Stanton, founder and first chairman, 1955; William Lambert, chairman for 1956; and Warren Dennis, chairman for 1957. The plaques were presented by Harry Isacoff, 1958 chairman.

William Lambert (left) and Michael Stanton (right) holding their plaques. They flank Harry Isacoff, 1958 chairman.

Featured speaker at the year-end meeting was James H. Baker, charter member and 1958 president of the SCC, who spoke on "Unwanted Cosmetic Ingredient — Bacteria." Mr. Baker discussed the pertinence of preserving cosmetic products against contaminating micro-organisms.

•

Dutch Packaging Exhibition

An international packaging exhibition, called "Europak 1959," will be held in Amsterdam, Netherlands, from April 21-28. In addition to exhibitions by Dutch firms, Great Britain will lead the list of foreign exhibitors with 75 firms scheduled to show their packages or machinery.

The next largest entry will come from Germany, with 58 exhibits, U. S. with 26, Belgium 14, France 11, and Italy 5. Also exhibiting will be firms from Austria, Canada, Denmark, Finland, Norway, Sweden, Switzerland, and Venezuela.

•

Dunbar Names J. E. Logun

John E. Logun has joined Dunbar Laboratories, Division of Chemway Corp., Mountain View, N. J., as a research chemist in product development. He was formerly associated with E. R. Squibb & Sons and Dome Chemicals, Inc.

Anderson Joins Geigy

Geigy Agricultural Chemicals, division of Geigy Chemical Corp., Yonkers, N. Y., has announced that Vernon E. Anderson has joined the Geigy sales staff. He will represent Geigy in the states of Wyoming, Colorado, Nebraska, Kansas and Missouri.

A graduate of Gustavus Adolphus College with a biology degree, Mr. Anderson received his masters degree in Economic Entomology from Iowa State College.

DARASOL*

Pat. Pending

NEW

ultra-fast drying resinous coating that won't clog aerosol release valves

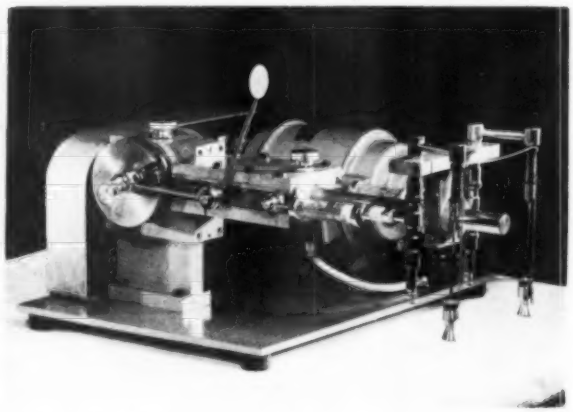
DARASOL is a versatile NEW solution suitable for either protective or decorative coatings. Protects against rust . . . provides waterproofing and fireproofing qualities . . . and its remarkably fast drying action makes this new Diamond development ideal for use in paints. It's nonflammable . . . has unusually low odor factor. Available in gallon, 5-gal and 55-gal drums. For further information and FREE 3-oz sample, write Diamond Alkali Company, 300 Union Commerce Bldg., Cleveland 14, O.

DARASOL is distributed by The Kerden Company, Cleveland, Ohio

Diamond Chemicals

Equipment—Processes—Bulletins—

German Company Announces New Bottle Filling Unit



The "Liliput," showing filling heads in the right foreground.

Rudolf W. Fritsch, 42 Richard Wagner Strasse, Bayreuth, Germany, a producer of filling units, has just announced a new ingredient filler called the "Liliput." Especially designed for filling perfume flasks of all sizes, and for pharmaceutical and other small containers, the new machine is reported to be capable of filling from 2,000 to 3,000 units per hour.

According to the manufacturer, even the most viscous materials can be filled through the "Liliput," and any stroke wanted can be adjusted with few manipulations. The filling speed is determined by means of one counter screw, which can be adjusted either before or during the machine's operation. Filling heads are available to fill from 5 to 250 ml. per container. The vertical suction unit for use with perfume containers comes as optional equipment. Additional information and export prices are available directly from the company.

•

Silicone Reference Guide

A 16-page up-to-date reference guide on silicones has been issued by the Dow Corning Corp., Midland, Mich. Called the "1959 Guide to Dow Corning Silicones," the booklet describes which silicones can be used for various applications. It contains graphic examples of where each silicone product is currently being used, and gives information on how to get specific data on the material best suited to any particular application. Altogether, more than 150 silicone products are described.

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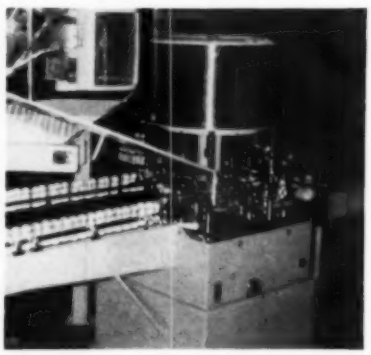
Automatic Valve Inserter

A new machine for automatically inserting aerosol valve assemblies into cans at speeds up to 150 a minute has



been introduced by PMC Industries, Inc., Hackensack, N. J., designers and manufacturers of capping machines for special applications. Known as the "RI-1200 Aerosol Valve Inserter," the new machine is a continuous rotary motion, 12-station unit.

In operation, the valve inserter takes valve assemblies from a bulk supply, sorts them, and automatically inserts them into the cans. A specially designed guide mechanism assures positive control of the dip tube and positive insertion of close fitting assemblies. Any length dip tube is accommodated, and by use of change-over parts, a full range of can sizes can be handled.

One unique accessory for the "RI-1200 Inserter" is the attachment which automatically orients the dip tube with the printing on the can. Where this attachment is used, it is reported, the curvature of the dip tube in relation to the printing will always be uniform.

Companion equipment for use with the new inserter includes an automatic pre-assembly unit and an automatic capper for placing overcap spout assemblies on the aerosol cans. The pre-assembly unit takes tubing from a reel, attaches it to the valve, and cuts the tubing to the proper length. The automatic capper is the same design as the "RI-1200 Aerosol Valve Inserter," and both pieces of companion equipment operate at the same speed as the "RI-1200 Inserter" making a continuous, automatic assembly operation.

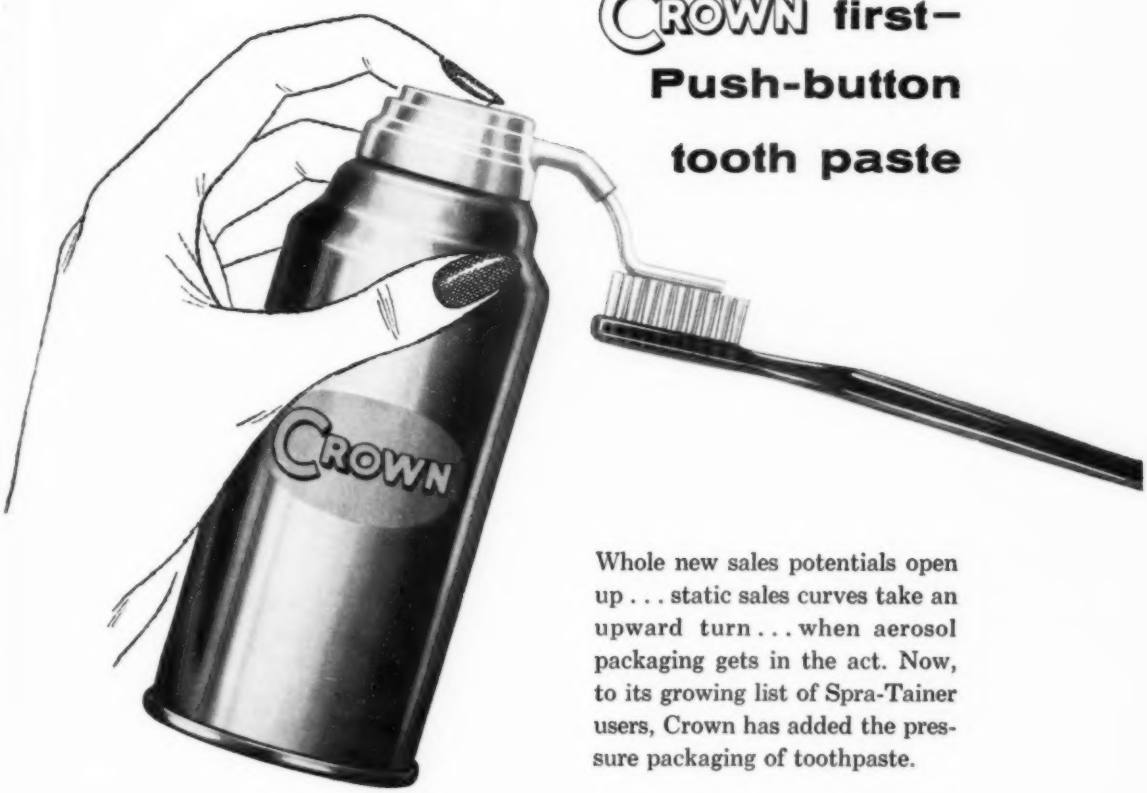
Complete specifications, prices, and literature for the new inserter and for companion equipment are available from PMC Industries, Inc., 293 Hudson Street, Hackensack, N. J.

•

New Systemic Insecticide

A new systemic insecticide for control of cattle grubs has shown promise and versatility in experimental use by USDA entomologists. The new chemical, an organophosphorus compound known chemically as (O-(4-tert-butyl-2-chlorophenyl) O-methy methylphoramidothioate) can be administered either orally or as a spray. Nearly perfect control results were obtained when four quarts of spray per animal were used, but sprays of half that amount provided 70% to 80% control. The spray formulation included a wettable powder containing 0.75% active material, and the sprays were applied under an operating pressure of 250 to 300 pounds.

Another CROWN first— Push-button tooth paste



Whole new sales potentials open up . . . static sales curves take an upward turn . . . when aerosol packaging gets in the act. Now, to its growing list of Spra-Tainer users, Crown has added the pressure packaging of toothpaste.

Crown, who pioneered the aerosol can with Spra-Tainers, has continued to expand production facilities in the aerosol field . . . offers the most complete line of aerosol cans available in both the seamless and fabricated styles.

If you want to capitalize on the profit potential of the push-button age, call the man from Crown and consult with him on methods of aerosol packaging. Crown Cork & Seal Company, Inc., Can Division, 9300 Ashton Road, Philadelphia 36, Pa.

for closures
for containers
for machinery

CROWN

CROWN CORK & SEAL COMPANY, INC.

THE WORLD OVER

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ROYAL DUTCH AIRLINES

"The time just flew!"

You've crossed the ocean – and it's hard to believe the trip is over so soon. But it's easy enough to understand once you've flown KLM. There's such solid comfort. And such a friendly climate aboard. What's more, the cuisine is superb. Why, even the simplest fare becomes a delicacy in the artful hands of a KLM master chef.

These are just a few reasons why people who travel often by air take the Royal Dutch route – to all points of the globe. Next time you plan a long air trip, why not shorten the miles? Let a KLM flight crew give you all the attention in the world. It makes such a royal difference. See your Travel Agent or call your nearest KLM office.

KLM Royal Dutch Airlines, 430 Park Avenue, New York 22, N. Y.

Aerosol Disposal Unit

A new aerosol can disposal and product reclaiming device that is claimed to solve the disposal problem long plaguing the aerosol industry has been developed by the Builders Products Division of Builders Sheet Metal Works, 108-110 Wooster Street, New York 12. The unit is reported to fit all size aerosol cans, and works by mechanically piercing the valve cap to allow the product to flow into a salvage pail.

In steel construction, with a polyethylene salvage pail, the device will sell for $28.50. Constructed entirely of stainless steel, with a stainless steel pail, the unit costs $56.20.

•

Dip Tube Guide Sheet

A guide sheet on the design of extruded plastic dip tubes for aerosol containers is available from Anchor Plastics Co., 36-36 36th Street, Long Island City 6, N. Y. Actually a reprint of an article by Leo Gans in the *1959 Modern Packaging Encyclopedia*, the guide sheet explains the working of the dip tube, factors governing choice of material, size specifications and special applications.

•

New Anaesthetic Aerosol

Bengue & Co., London drug firm, has developed an aerosol anesthetic oil for local application in casualty surgery, dentistry, radiology, etc. Developed at the request of an English hospital, the product is known as "Nestosyl." It contains 4% benzocaine, 6% butylaminobenzoate, 5% resorcin, and 0.02% hexachlorophene in a vegetable oil vehicle. The propellant is reported to be one that evaporates rapidly to avoid too-rapid chilling of skin or wound.

•

Gas Cylinder Bulletin

Facts about "Hackney" high-pressure gas cylinders for storage of industrial and medical gases are contained in a new bulletin released last month by Pressed Steel Tank Co., Milwaukee, Wisconsin.

In addition to facts about the range of cylinder sizes, capacities and ICC specifications, the bulletin points out the weight-saving value of seamless cold drawn cylinders—important in considering means of lowering shipping costs. Although lightweight, with uniform sidewall thickness, strength and capacity, Hackney high-pressure cylinders are said to "more than comply" with ICC safety specifications. The company suggests that, since they are easy to clean and paint, these cylinders are ideal for use in research departments, laboratories, etc. For the bulletin, write the company at 1445 S. 66th St., Milwaukee 14.

•

New Moisture Balance

A new and improved moisture balance for fast and accurate determinations of moisture content in a wide variety of materials has been designed by Central Scientific Company, Chicago. Principal feature of the new model is its built-in autotransformer which regulates voltage automatically and provides more convenient temperature control than previous moisture balances in which the autotransformer was a separate unit.

Among the materials for which the balance may be used with accuracy and reliability are: nonfat milk powder, dry milk, pharmaceuticals, chemicals, soap and detergents, food products, resins, paint pigments, plastics, and lactose. Products that do not change their chemical structure or decompose while losing water are most suitable for testing.

Said to be simple to operate by even an inexperienced laboratory technician, the moisture balance is capable of reducing from one-half hour, or more, to only a few minutes the time required for accurately testing the moisture content of a material.

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Rotary Liquid Product Fillers
Rotary Vacuum Purge Crimpers
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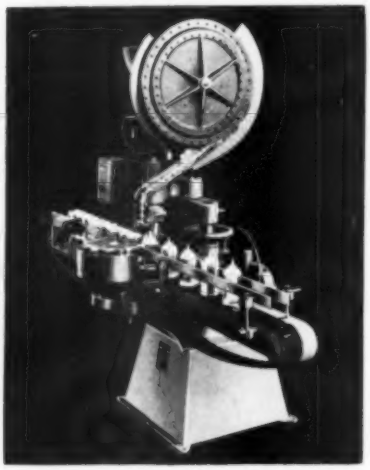
DETROIT 7, MICHIGAN

Aerosol Valve Capper

Speeds up to 120 valves per minute are reported for the new "Model H-O-FV" capping unit built by Con-



solidated Packaging Machinery Corp., Buffalo. The unit sorts and applies all types of aerosol valves that do not require dip tubes.

The new unit includes sorting hopper, conveyor and inserting mechanism. It is equipped with variable speed drive so speed can be synchronized with other equipment.

Simple in construction, it is designed so that cans of the same diameter but varying heights frequently can be handled with the same star wheel arrangement. Change-over for different size cans can be made in three to five minutes.

Originally engineered for applying valves to aerosol cans of whipped cream, the Consolidated "H-O-FV" is said to be adaptable to a wide range of applications.

•

Anti-Rheumatic Aerosol

"Algispray," a new aerosol product for use in treatment of rheumatism and associated complaints, has been introduced on the British market by Castle Laboratories, Ltd., 77 Castle Street, Hinckley, Leics. The product's chief advantage is that it may be self-administered by infirm or semi-immobilized sufferers. It contains 5% hydroxyethyl salicylate, 5% diethylamine salicylate, and 1% methyl nicotinate.

British Pressure Filler

"Presfil," a new pressure filling machine designed to meet the need of an inexperienced user in a limited space, has been introduced on the United Kingdom market by two companies of the Metropole Group—Surplice and Tozer Engineering Co. (Acre Works, Windsor, Berks.) and M. Callaway, Ltd. (Saville Works, Beckenham, Kent).

The unit is said to have been especially designed to prevent wasting of propellant. To accomplish this purpose volume is reduced between the cutoff point in the filling head and the seal the head makes with the valve. Another advantage cited is accuracy of filling, which is achieved by means of a metering chamber consisting of a cylinder with a free-floating, self-priming piston. The manufacturers point out that, since vaporization cannot occur behind the piston, variations in dosage can be kept to as little as 0.02%.

The machine was designed by H. P. Schofield, well-known British packaging consultant. Costing about $1,470, the "Presfil" is reported to have a filling rate of 240 containers per minute. Once the container has been placed in position beneath the filling head, removal of air, filling of product, and loading of propellant, follow in automatic sequence.

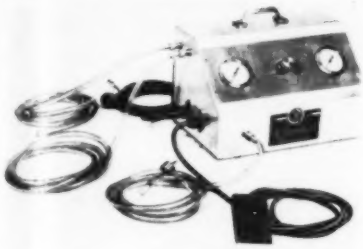
•

Industrial Product Bulletin

A new booklet just released by Crown Industrial Products Co., Woodstock, Ill. contains detailed information on the history of aerosol spray products and their industrial applications today. Crown has assembled this material in the course of its pioneering work in developing one of the largest complete lines of industrial aerosol products.

The 16-page, booklet is illustrated with drawings and photographs. Among the subjects covered are the history of aerosol packaging, development of pressure containers and valves, methods of filling and principles of operation. A discussion of cost and time-saving advantages of this type package for industrial and commercial use is also presented.

Powder Filling Machine



The Perry "Accofil Lab Gun", a low-cost, patented powder filling machine designed especially for use by laboratory technicians and in plants where limited production is required, has been introduced by Perry Industries, Inc., Brooklyn, N. Y.

Employing the vacuum-pressure principle patented by Lederle Laboratories, Division of American Cyanamid Co., this new gun is expected to find wide application in pharmaceutical houses and in the manufacture of cosmetics, aerosol-dispensed powders, insecticides, and other products.

The lab gun consists basically of a cylinder and adjustable piston combination into which a vacuum-pressure cycle is introduced. The piston of the gun is adjusted to get the exact fill required. Then the cylinder is inserted into the bulk powder container and automatically sucks up the exact amount. The operator then inserts the cylinder into the vial or other container and presses a foot pedal; a perfect slug is deposited into the container. The process can be quickly repeated any number of times by an unskilled operator with the same result.

The unit has a wide filling range—from a fraction of a gram to several pounds. Its accuracy (fill variations are often less than plus or minus 1%) enables it to be used as an exact-weight machine as well as a filling machine. All parts that come in contact with the product are designed to be easily sterilized. The cabinet is made of aluminum and stainless steel.

Measuring 14" long, 12" high and 12" wide, the new gun is easily portable and plugs into any 110-volt outlet. It is equipped with oil-free, vacuum-pressure electric pumps.

Further details are available from the company at 6401 Third Avenue, Brooklyn 20, N. Y.

•

Emulsion-Detergent Book

Union Carbide Chemicals Co., division of Union Carbide Corp., New York, has just issued its largest, most complete sales booklet, "Emulsions and Detergents" — 100 pages of detailed technical information.

Starting with the fundamentals of surface active agents and emulsion formation, the book goes on to spell out specific formulas containing Carbide's products for use in textile and leather coatings, agricultural chemical formulations, automotive specialties, cosmetics, and detergent formulations, and a variety of other products with aerosol and non-aerosol applications.

The new tenth edition of this formulary has been reviewed, revised and brought up to date. Particular emphasis has been put on the sections on polishes, on cosmetics, and on detergents.

Develop New Bronchodilator

A new bronchodilator believed to be the first to prove effective orally, parenterally, and by inhalation has been introduced by Lakeside Laboratories, Inc., New York. Called "Caytine," the new drug is designed to facilitate individualized management in asthma, emphysema, bronchitis, and bronchiectasis. It is the only brand of alpha (alpha-methyl-3, 4-methylenedioxyphenethylamino)-methyl-protocatechuyl alcohol hydrochloride.

The new bronchodilator is characterized by its prompt relief for patients and prolonged action, according to clinical reports. The inhalation acts within minutes, with action persisting for two hours. It has been used successfully in geriatric patients with no serious side reactions. Blood pressure has not been raised and no adverse ECG, EEG, hepatic, renal, or hematologic changes have been noted in clinical studies.

A number of bronchodilators have been adapted for aerosol use within the past few years.

SCREW on TOP
for GLASS and METAL
AEROSOL CONTAINERS
Used to make refillable glass and metal Aerosol Containers
Will fit coated and uncoated bottles. If you have a special bottle send a sample to make sure of fit.
FULL LINE of LAB EQUIPMENT
BUILDERS' supplies complete laboratory set-ups, including laboratory pressure fillers, drill press capping machines, liquid transfer apparatus, can piercing pressure testing apparatus, constant temperature water baths, dry ice coolers, cabinets, formica top tables, tanks and tank racks, etc.
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108 WOOSTER STREET NEW YORK 12, N. Y.
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Airco Regulator Catalog

A new 36-page catalog covering Air Reduction's complete line of cylinder, manifold and station pressure regulators is now available.

The illustrated booklet contains flow and pressure specifications, as well as inlet and outlet connection dimensions, for each regulator. Adapters, station valves, flowmeters, hose connections and pressure gauges are also described in detail.

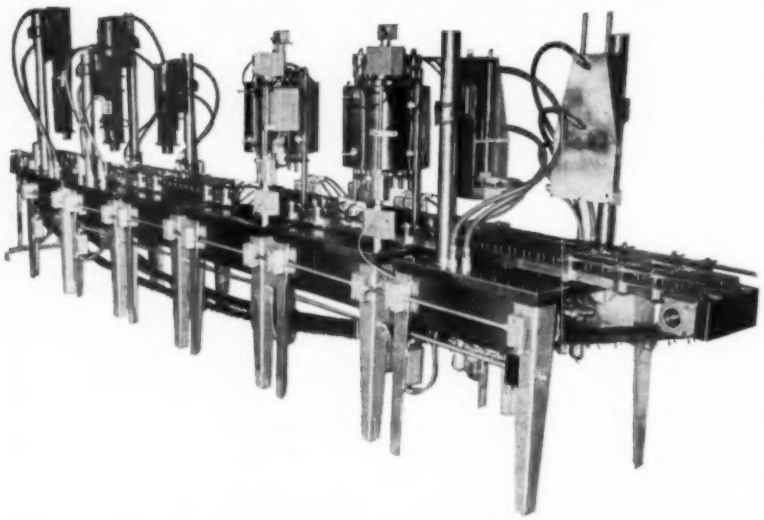
A copy may be obtained by writing Air Reduction Sales Company, a division of Air Reduction Co., Inc., 150 East 42nd Street, New York 17, New York. Specify form ADC 705F.

•

Polak's Frutal Catalog

A new 1959 catalog has been announced by Polak's Frutal Works, Middletown, N. Y. The cover carries a new design, in which major emphasis is given to the initials "PFW" as being a more convenient designation than the firm's full title.

MOJONNIER . . . The Originator Of The Complete "Add-A-Unit" Aerosol Filling Line Offers



COMPLETE LINES FROM UNSCRAMBLER TO PACKING TABLE . . . FROM ONE SOURCE

Whatever aerosol packaging method you prefer, whether pressure filling, cold filling or nitrogen gassing, Mojonnier Associates Division, Kartridg-Pak Machine Co., can supply your needs. Single purpose or combination lines made up of pre-engineered components designed to work together, save you both time and money.

Installation is a simple matter of assembling the Mojonnier Add-A-Unit components like a train of cars into the integrated filling line of your choice. Be sure to check the world's leading supplier of aerosol filling equipment for all your machinery requirements.

WRITE FOR YOUR "BRIEF CASE OF AEROSOL PACKAGING MACHINERY" WHICH DESCRIBES EVERY COMPONENT NEEDED IN AN AEROSOL PACKAGING LINE

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DIVISION KARTRIDG-PAK MACHINE CO.

9151 Fullerton Avenue, Franklin Park, Ill. • GLadstone 5-1013 • NAtional 5-8270

Liquid Filling Stem

A new liquid filling stem assembly has been developed by The Karl Kiefer Machine Co., Cincinnati. Called the "Bottom-Up" fill device it is designed to eliminate excessive foaming, reduce aeration, permit increase or decrease of level selection while in operation, and provide faster filling speed.

In preparing for the liquid release, an elongated section is cammed down, almost to contact the inside base of the container. The product then flows through orifices just above the tip of the stem. Continuing the filling cycle, the orifices are always immersed in the liquid to prevent any likelihood of foaming or air entrainment. With the completion of the fill the stem is retracted within a tube subjected to vacuum. This reportedly prevents the possibility of a stem dripping after leaving the container. The unit is especially suited to filling foamy detergents, syrups, and a wide variety of other products.

•

Physical Properties Booklet

A new 1959 edition of the comprehensive "Physical Properties" booklet has just been published by Union Carbide Chemicals Company, division of Union Carbide Corp., New York. This booklet has come to be regarded as a reference work on physical properties of a wide variety of organic chemicals by purchasing agents, chemists, engineers, and teachers.

The 28-page 1959 edition covers more than 400 organic chemicals, with tabulations of carefully determined physical properties and brief descriptions of fields of application. There are 57 products covered in the new edition for the first time, including "Ucon" aerosol propellants and "Polyox" water-soluble resins. Additional physical property data are available on "Cellosize" hydroxyethyl cellulose.

In addition to the inclusion of new commercial products, a center spread features "new chemicals"—those materials available in development quantities today, many of which will find their way into the 1960 edition of the "Physical Properties" booklet as full-fledged commercial chemicals.

Solvent Recovery Unit

Vic Manufacturing Co., 1313 Hawthorne Avenue, Minneapolis, Minn., has announced availability of a small, packaged low-cost solvent recovery unit. Because of the various problems found in recovering solvent vapors in industrial plants using small quantities of solvents, the company found it necessary to develop many novel features in the new solvent recovery unit. These new features are reported to produce highly efficient results.

Vic uses Columbia activated carbon, and each unit contains a specific charge of Union Carbide carbon for each application. The material is said to provide maximum recovery of solvent vapors and years of service life.

The Vic unit is said to show attractive return where solvent costs are as low as $1,000 per year. Where solvent costs are $50,000 or more per year, installation of a large recovery system is frequently justified. It can be considered for use with any process in which a water-immiscible solvent is lost by vaporization.

•

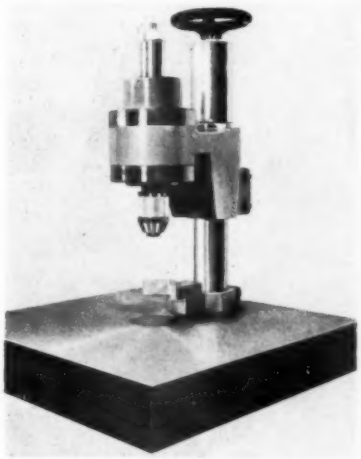
New Chromatograph Literature

Beckman Instruments, Inc., has issued a specifications sheet describing a new accessory for recording gas chromatograph column or sample inlet temperature directly on the recorder chart. Called "Bulletin 752," it explains the use of the Temperature Readout Accessory, a temperature measuring-recording device for installation on one-millivolt recorders used with Beckman and other gas chromatographs. Copies of the bulletin may be obtained by writing to Beckman Scientific and Process Instruments Division, 2500 Fullerton Road, Fullerton, Calif.

•

Compressed Gas Filling Unit

A new nitrogen and compressed gas filler designed for pressure filling of all types of aerosol containers and valves has been announced by Druk Pak, Inc., Zurich, Switzerland. Though capacity naturally depends on type of valve and pressure desired, the company reports that with a suitable valve, a six-ounce container can be charged with eight atmospheres of pressure (about 117 psi) in anywhere from two to six seconds.



A reducing valve is mounted in the rubber hose line connecting the filler to the nitrogen cylinder and set to the desired pressure. The charge is completed when the pressure in the container is equalized with that set on the reducing valve. With the foot pedal depressed, the filling head descends over and automatically centers the container valve under a universal filling adapter fitting all standard one-inch mounting cups. The adapter's cut-off valve is mechanically opened by a springed pressure in the filling head, variations in container height being accommodated by a springed disk on the machine base on which the container rests. Changes in container height are easily adjusted by adjusting special screws and wheels.

Base of the new unit is cast aluminum, and all exposed parts are either chromed or lacquered for corrosion protection. Though unit above is equipped with a single filling head, multiple-head units are also available.

•

British Antifrost Spray

A new aerosol "antifrost and demister spray" for automobile windshields headlights, and other glass surfaces has been developed by Bradville Trading Co., Ltd., 6 Stratton Street, London W. 1. The makers state that the product, which is called "Dice-It" and will retail at just over $1, will not harm paintwork or rubber.

AEROFLEX® "P" DIP TUBES

- QUALITY CONTROLLED—Every shipment laboratory tested for crack resistance.
- Ideal for aerosols, atomizers, squeeze bottles and lotion pumps.
- Odorless, non-toxic, resistant to most filler and propellant chemicals, crack resistant through ANCHOR's exclusive formulation of polyethylene.
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- ANCHOR also extrudes in all of the newest materials—polycarbonate, polypropylene, and rigid polyvinyl chloride . . . offering reliable service and on-time deliveries.

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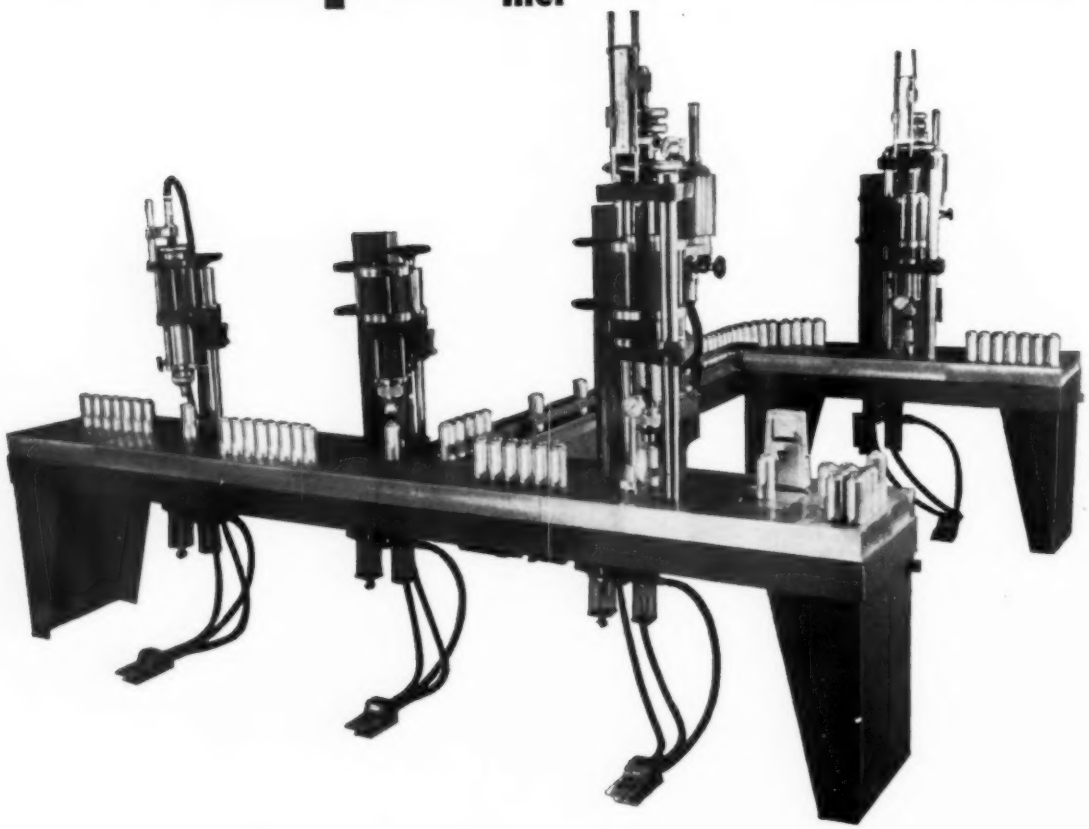

druk pak

Manufacturer:

Johann Waldherr,
Machine Builder
Kafertaler Str. 162,
Mannheim, Germany

Sales Representatives:

druk-pak, inc.,
Merkur Str. 36,
Zurich 7, Switzerland

Publishers of "European Aerosol Survey" a quarterly periodical and "Aerosol Packaging" an Exposé covering all aspects of the aerosol package.

A WM-DP semi-automatic Pressure Filling Unit with Product Filler and Valve Clincher serving two Propellant Chargers. These sturdy and efficient machines cover your loading requirements, large or small. Some details on the

Propellant Charger WM-DP 340:

Stainless Charging Cylinder, adjustable capacity— 5 to 375 g.
Charge Tolerance, under 100 g, fractional—over ± 1 g.
Operating Pressure, according to valve 6 to 8 Atü.
Gas Loss, less than 1%
Capacity: The above line with two Propellant, Chargers does over 8500 twelve ounce units per 8 hr. day. In six ounce units, according to valve and charge, 10 to 13 per minute.

Other WM-DP Products:

Magnetic Chain Link and Tank Type Test Baths, Conveyor Lines and Tracks, Mufflers and Fast Exhaust Units, Propellant Pumps, Purgers, Complete Line of Laboratory Equipment, etc.

Valves for metal cans, glass bottles, foams and small (50 mlg) metered quantities. All valves are quick gassing, pressure fillable.

Concentrates, a large line of tested products, some for dilution up to 1:9.

New Publication Announced

Single-Phase Transfer of Liquefied Gases, by Robert B. Jacobs, National Bureau of Standards Circular 596, issued Dec. 1, 1958, 42 pages, 30 cents. (Order from Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.)

The greatly increased use of liquefied gases in various industrial activities has prompted an examination and re-evaluation of the basic problems connected with their handling. The current method of transporting liquefied gases over distances exceeding a few hundred feet is by mobile, insulated transport vessels. This circular examines, in detail, the feasibility of transporting liquefied gases over appreciable distances through piping systems.

The problems encountered in the single-phase transfer of liquid gases are discussed in detail. A general system of equations and the empirical information required for the design of long-distance transfer systems are presented.

A closed-form solution for the mathematical equations for incompressible flows is obtained and discussed. Information required for numerical computations involving helium, hydrogen, nitrogen, and oxygen is given in graphic form; the numerical solutions for three general problems involving hydrogen and oxygen are obtained.

NOTE: Foreign remittances must be in United States exchange and should include an additional one-fourth of the publication cost to cover cost of mailing.

•

Laboratory Shaker-Gasser

Aerofill, Ltd., Walmgate Road, Perivale, Middlesex, England, recently announced a new laboratory shaker-gasser unit with an output sufficient for small production runs. The unit is designed specifically for filling nitrous oxide, carbon dioxide, or mixtures of the two.

After the product has been filled into the container and the valve crimped on, the can is placed in the shaker-gasser and an adjustable head brought down to clamp the can in position and open the valve. During the six-second gassing the can is vibrated to dissolve the gas into the product.

The unit, powered by compressed air from an external supply, has a frequency range of vibration of from 100 to 2,000 cycles a minute. It stands 20 inches high, has a nine-inch diameter base, and weighs just 35 pounds.

•

Fleuroma Brazil Branch Set

Fleuroma, Inc., New York, has announced the establishment of an affiliate, Essencias Fleuroma Limitada, in Sao Paulo, Brazil. Facilities have been obtained and operations are scheduled to start in the very near future. Leo Schulmann, a veteran of Fleuroma's technical staff for a decade, has been appointed general manager of the Brazilian organization.

Fleuroma is also engaged in a program of enlarging its European facilities and has appointed Eric W. Zielenziger as foreign operations manager.

Shulton Elevates Theile

The appointment of Fred C. Theile as research administrator was announced recently by Shulton, Inc., New York. He will coordinate the activities of the company's organic research laboratory, control and analytical laboratories, perfume laboratory, consumer research department, and the library.

Mr. Theile, who joined Shulton in 1951, was formerly production manager of Shulton's Fine Chemicals Division, and perfume administrator.

•

Add Color to Oven Cleaner

A green tint has been added to a leading English oven cleaner in order to prevent wastage. Sparklets, Ltd., Tottenham, England, added the color as a result of a recent survey of housewives which indicated that they were spraying the then colorless liquid wastefully, and were continuing to spray until there was an unnecessary foam build-up. Now instructions say that the surface should be sprayed until it is covered with a green tinge.

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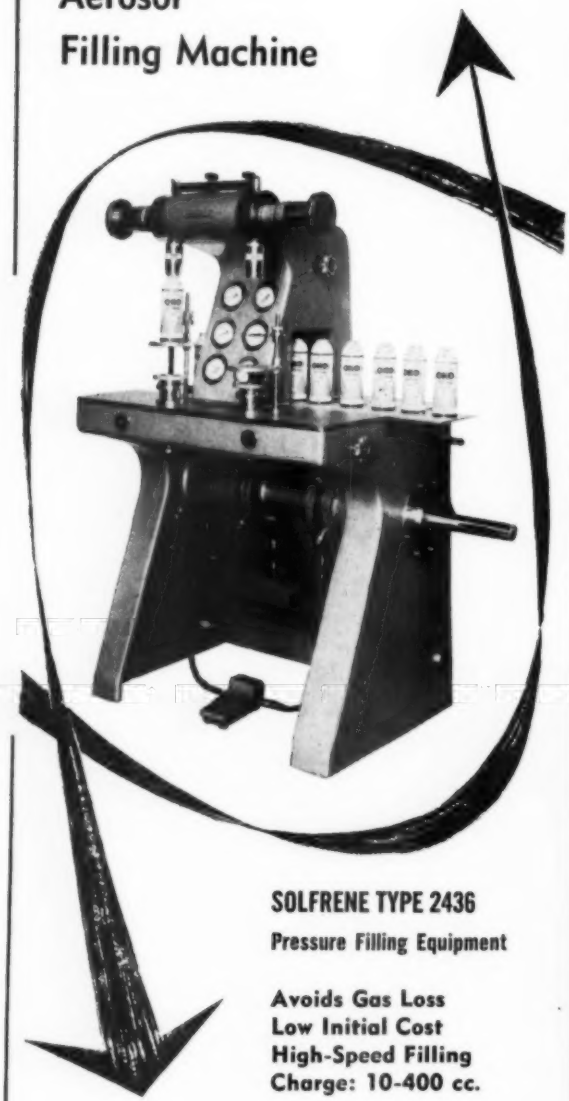

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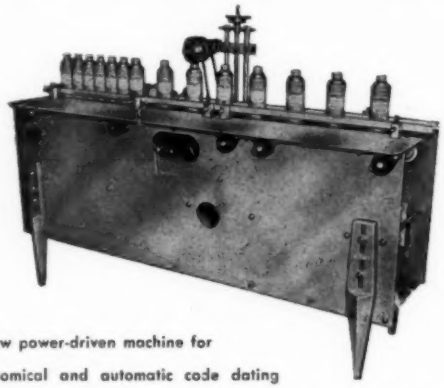

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CSMA Issues New Aerosol Regulations Guide

Agencies and Regulations of Interest to the Aerosol Industry, Third Edition. Compiled by the Executive Office and the Subcommittee on Public Regulations of the Scientific Committee of the Aerosol Division of the Chemical Specialties Manufacturers Association. Published by the Chemical Specialties Manufacturers Association, 50 East 41st Street, New York 17, N. Y.; $10; 119 pages.

Though the price of this relatively small paper-bound book may, at first glance, seem high, few will deny that the information it contains makes it a "must" for every aerosol filling plant and every aerosol marketer. The bringing-up-to-date of every important legislative regulation (in an industry as dependent on good government relations as is the aerosol industry), is a feat of importance wherever it may be undertaken.

For the benefit of the neophyte to the aerosol industry, the third edition again contains a brief and concise statement of the function and the aims of the pertinent industry associations (the CSMA, Association of American Railroads, American Trucking Association, and the Compressed Gas Association) as well as summaries of the rules and functions of the USDA, U. S. Post Office, Federal Trade Commission, Department of Health, Education, and Welfare, and Food and Drug Administration.

Very naturally, the major portion of the book is devoted to the pertinent provisions of *Tariff No. 10* of the Interstate Commerce Commission, for it is this awesome looking document that has more real influence over aerosol packaging methods than any other federal or state legislative tool. Technically, the tariff provides "regulations for the safe transportation of explosives and other dangerous articles by common carriers by railroad and carriers by highway in interstate or foreign commerce." For even the legal department of an aerosol marketer to wade through this vast array of regulations dealing with dynamite, acids, etc., and to isolate those dealing with compressed and liquefied gases, is truly a herculean task. However, with the aid of this new CSMA volume, the task becomes almost simple.

Also included in the third edition are some regulations that may tend to be overlooked by the aerosol marketer. In this category are *Tariff No. 6-B* of the Air Transport Board of the Civil Aeronautics Board, Shipment Regulations of The Port of New York Authority, and those of the cities of New York, Cleveland, and Buffalo.

One important and praiseworthy feature of the book, that could go unnoticed in a quick examination, is a brief paragraph (just before each set of regulations) which explains the importance of that series of regulations to the aerosol packager. Often included in these paragraphs are exact references to specific articles or paragraphs of special significance.

■

Geigy Appoints Heming

The Geigy Pharmaceuticals Division of Geigy Chemical Corp., Yonkers, N. Y., has named Dr. Albert Heming to the post of director of promotion.

A Correction

On page 69 of the December issue of AEROSOL AGE, there appeared a story reporting that Allan C. Stoneman had been elected board chairman of the Allen B. Wrisley Co., Chicago. Actually, Mr. Stoneman is president of Wrisley's parent company, Purex Corp., and the new board chairman of Wrisley is Wrisley B. Oleson. Mr. Oleson was elected to that post when Eugene F. Bertrand became president of Wrisley.

Hoescht Pharmaceuticals in U. S.

Hoescht Pharmaceuticals, Inc., has been organized in New York as a subsidiary of Intercontinental Chemical Corp., also in New York. The new company, headed by Dr. K. I. Soltner, will represent the U. S. interests of the Pharmaceutical Division of Farbwerke Hoescht, AG, Frankfurt-Hoescht, Germany, one of the major chemical corporations in Europe.

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New Aerosol Formulations

With this issue, *Aerosol Age* begins a new section, devoted to listing and describing new formulations developed in the laboratories of suppliers, custom fillers, and others. It is felt that this section will be of particular value to the prospective marketer. Companies are invited to contribute their formulations—*The Editor*

New Aerosol Shoe Shine

The Universal Spray Can Corp., New York supplier of aerosol concentrates, has announced the availability of a new aerosol shoe shine formulation that dries bright, permits no build-up, and is rebuffable. The polish can be removed from the shoes with soap and water, even though it is impervious to water itself.

In laboratory tests by an independent New York consulting laboratory, the spray shine formulation was compared with two well-known paste waxes. A specular gloss reading of 58 was recorded on a Photovolt Photoelectric Glossmeter for the aerosol product, against a reading of 18 and 24 for the conventional paste products. The spray formulation was judged superior in endurance flexing, and showed "little effect" to an application of gasoline that partially removed the shine of the paste waxes. Though its buffability rating was about identical with that of the pastes, the spray formulation showed marked superiority in a specular gloss reading measured during various stages of weathering.

Sample of the formulation, prices for bulk quantities, and formula details are available by writing directly to the company at 80 Washington Street, New York 6.

•

White Shoe Polish

A spray type aerosol formulation for polishing white shoes has been developed by the technical service laboratory of the General Chemical Division of Allied Chemical Corp., 40 Rector Street, New York 6. The product eliminates messy daubing and hand contact usually associated with white shoe polishes, and also allows quick and convenient touch-up without elaborate precautions.

The formulation can be pressure or cold filled and the valve used should be a spray type with a vapor tap. Pressure is approximately 445 psig. Formulation breakdown is as follows:

	Wt. %
PVP/VA (30:70)	
50% Ethanol sol.	5.4
Diiso Octyl-Sebacate	1.2
Titanium Dioxide	8.9
Glycerine	2.5
Isopropanol, 99%	14.6
Acetone	22.4
Propellant 12	45.0

•

New Auto Polish

An aerosol auto polish formulation which can be packaged with conventional aerosol propellants in foam or nitrogen in stream has been announced by Universal Spray Can Corp., 80 Washington Street, New York 6, N. Y. It is said to be easy to apply, easily rubbed on and off in the same motion, and can be applied in the heat of the sun or the cold of the winter. It acts as a cleaner, actually removing oxidized paint and is reported to give a long-lasting high lustre.

The new formulation has an antistatic feature to repel dust and prevent it from penetrating or adhering to the wax finish. Samples are available to prospective aerosol packagers.

•

Aerosol Run Stopper

The technical service laboratory of the General Chemical Division of Allied Chemical Corp., New York, has announced the development of a new formulation for a spray run stopper, a fast-drying adhesive which has proved effective in preventing the extension of a stocking run. The container is held by the user so that the valve orifice is three to six inches from the point of application, and then the spray is applied sparingly to one or both ends of the run.

A filling pressure of approximately 25 psig. is recommended. The product is non-flammable, and, though stability tests have not yet been completed, instability of the formulation is not anticipated.

The principal ingredients of the formulation, without coloring and perfume, are as follows:

	Wt. %
Acryloid B-72 (40% solids)	5.0
Ethanol (SDA 40, anhyd.)	5.0
12/11 (440:60)	90.0

•

Geigy Appoints W. C. Hanes

Wilbur C. Hanes has been named sales representative for Southern California and Arizona by the Geigy Agricultural Chemicals Division of Geigy Chemical Corp., Yonkers, N. Y. He formerly headed the pest control program for Monrovia Nursery Co. and in 1950 joined Trojan Laboratories.

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Atlas Powder Revamps Sales

Key changes in its chemical sales department have been announced by the Atlas Powder Co., Wilmington, Del. Henry C. S. Swab, manager of the company's New York sales office since 1956, was named general sales manager of the Awaness Dept., with headquarters in Houston. William A. Kessel, assistant regional manager of the New York office, was named to succeed Mr. Swab.

To take over Mr. Kessel's post the company named William R. Lucas, who had been assistant regional manager of the Wilmington region since May, 1955. Succeeding him was William P. Hillman, Jr.

First Aerosol Book

(*From Page* 46)

Appendices are included on common abbreviations (plus a valuable glossary of technical terms), and a fairly complete listing of all trade marks for component materials and packages mentioned in the text. And finally, there is an exhaustive listing of aerosol firms throughout the world that should provide good material for future mailings of U. S. and European suppliers. (Since the turn-over among smaller firms in the industry is so rapid, this list should be checked before using.)

In any book, it is extremely difficult for the authors to be completely objective. There *are* certain passages that were obviously written by Mr. Pickthall and others that just as obviously were written by Mr. Herzka. For instance, the pages on the dangers of glass containers bear the distinctive mark of Mr. Pickthall, since there is a restatement of much of the material included in his previous writings. From the standpoint of this reviewer, these subjective touches have definite value in a volume of this type, for they add new interest to what might be unexciting technical material.

The book is easily valuable enough to rate inclusion in every aerosol, insecticide, cosmetic, food, or perfume research laboratory, and should be a "must" for the executive of any company contemplating marketing a product in aerosol form. In fact, it may be used as the definitive reference book of aerosol technology for many years to come.—DAD★

Space Travel Packages

(*From Page* 29)

three months and certain more acid sauces even less. Syrups might last six months to one year depending upon their acid content, bland syrups and oils up to one year, and such materials as concentrated coffee had a maximum shelf life of about three months. Especially significant in this connection is the oft-stated need for development of a liquefied propellant that will prove applicable for more food products and at the same time prove acceptable to the U. S. Food and Drug Administration.

Containers fabricated of other materials *can* provide longer shelf life. Glass, protected with a plastic coating, is one possibility, all plastic is another. Aluminum, because of its light weight, could have a definite place in this space-feeding research.

A wide variety of valves is available. In fact, Graham[10] states that many valves used for non-food products can be utilized for foods with little or no modification. Valves can be used to deliver the product as a fine or coarse spray, foam, stream, or metered with increments of anywhere from one drop to 1 ml. or 5 ml. Also, actuators that deliver drops in series, ribbons, or special patterns for decorative effects can be used. However, in space flight each person will undoubtedly require his own package with a special oral adapter tube to prevent air contamination.

Depending on the size of the cockpit or capsule in the space vehicle, it may be desirable to have the food dispensed in the upright position, completely inverted (sans dip-tube), or in a variety of positions (as does the "Gulf SA" valve).

As to propellants, the major success in the food field in the past has been with mixtures of carbon dioxide and nitrous oxide. However, for current market successes, packagers are using more and more nitrogen as the

propellant. This propellant cannot be used for foam, and when a foam product is desired, carbon dioxide-nitrous oxide mixtures are still used.

DuPont recently developed a new liquefied gas propellant called "Freon C318," which is currently being studied by the Food and Drug Administration for use with foods. This propellant has limited solubility in water and is only about 14% soluble in oil.

Nitrogen is almost completely inert to foods and is only slightly soluble in most food products. In many applications, however, it does not provide strong enough pressure to dispense all of the product in the desired spray pattern.

All techniques for the processing of pressure filled food products are designed primarily to extend their shelf life. One satisfactory method is hot filling of a cooked product into sterilized containers. The gas may be added hot, with or without agitation.

Electricity, used in the dielectric or industrial heating form, is used. Beer in cans can be so sterilized and it is a manner of economics as to its future application in pressure packaged foods. Radiation, or cold sterilization by such ionization activity, is also being watched with interest as a future method of food sterilization.

Products of high acidity or high sodium chloride or sugar levels will need less heat or less stringent treatment, since these characteristics are inherently aids to sterilization.

Effective sterilization of most foods by conventional methods is possible if the can is filled at 190°F. and held to 212°F. for periods varying between 10 and 60 minutes. The internal temperature will go up to 240°F. due mainly to increased pressure of the gases. If it is desired that the oxygen in the product be lowered as much as possible (for the prevention of mold growth), then hot fill is best. Though these methods have been used successfully for conventional canned products, it is doubtful whether such high temperatures will be practical when commercial aerosol containers are used. Due to the unique nature of the environment in the pressure filled can, it would appear that much work has yet to be done on the microbiological aspects of foods to be packaged in aerosol containers for space travel.

For space travel, it would appear that pressurized packages appear to offer much promise in supplanting conventional packages. For such foods as meat, vegetable, and potato mixtures, fruit and vegetable mixtures, plus beverages, the aerosol package has already reached a stage of development advanced enough to enable space scientists to go ahead immediately with this type of package. In ordinary every-day living, these products in pressure cans will find extensive use among sportsmen, travelers, and housewives, as aids in quick preparation of foods.

The future for this type of food, in both space and on the ground in competition with conventional products, would appear to be promising indeed.

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Gas Chromatograph

(*From Page 29*)

as a measurable binary mixture of component in carrier gas.

As with any new instrument, Pennsalt's maintenance group was concerned about the possibilities of excess maintenance on this instrument. However they found that the only

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requirements were routine jobs, such as renewing chart paper and ink and changing gas cylinders. They also found that after process changeover, new programming cycles were quick and easy to set up, thus speeding startups.★

New Piston Container

(*From Page* 21)

be done with it under pressure. For some time now we have felt that the basic approach to aluminum has been wrong, and that it isn't necessary to use thick-walled containers for pressure products. We think the piston container proves this idea has real merit."★

Aromatic Cos. Merge

(*From Page* 25)

van Ameringen said, "Although both companies are creators and producers of synthetic as well as natural fragrances and flavors, their activities in the past have been largely complementary rather than competitive in terms of products, processes, research, and the geographical location of plant facilities. Both companies have established reputations for pioneering work in chemical research and for utilizing modern production techniques. Van Ameringen-Haebler has devoted a higher percentage of its efforts to aromatics and fragrances; Polak & Schwarz, on the other hand, has concentrated much of its efforts on aromatics and flavors. We look forward to a combined creative, research and production organization better able to serve customers wherever they may be located. ★

Aerosol Dip Tubes

(*From Page* 24)

Of all the uses for extruded plastics developed since World War II, Mr. Fisch is (naturally enough) especially optimistic about aerosol dip tubing. He sees the developmental role of his company's new products as having been instrumental in opening up new product types to the aerosol package.

Krylon Elects Frazier

Walter A. Frazier, president of Hirsig-Frazier Co., Dallas, has been elected to the board of directors of Krylon, Inc., Norristown, Pa. Mr. Frazier's company has represented Krylon in the hardware and automotive trades in Texas, Oklahoma, and Louisiana for the past six years.

Aerosols in Review

(*From Page* 43)

essary to maintain the solution. The substitution of latent solvents (solvents which allow greater proportions of propellants to be added before precipitation occurs) for part of the more active solvents, is one way of achieving a more satisfactory balance.

Long-term Problems. Among the possible long-term problems are corrosion, and interaction between the paint solvents and rubber or plastics valve component. The possibility of corrosion arises from the tendency of the halocarbons to hydrolyse. Trichloromonofluoromethane is the worst in this respect and its use should be avoided if possible since it is difficult to exclude moisture entirely.

Many of the solvents used in paint formulations cause swelling of natural and synthetic rubbers and it is difficult to achieve a grade of rubber which will remain unaffected by all paint solvents. Since most aerosol valves utilize some form of rubber sealing device, the possibility of jamming should be investigated for the particular formulation under consideration. One valve which is particularly suited for use with paint formulations is the SAFCA valve (manufactured by Safca Aerosols Manufacturing, Ltd., Milbanke Way, Bracknell, Berks.). This is because its sealing washer is manufactured from P.T.F.E. (polytetrafluorethylene) which is inert toward practically all chemicals.

IN MASKING aerosol paint odors, a neutrality of odor is far preferable to the achieving of any specific "perfumey" fragrance. So declares Abraham Seldner, director of applications research for Polak & Schwarz, Inc., New York, writing in the Dec. 25th issue of *Paint, Oil & Chemical Review*. Mr. Seldner continues:

"Distinctive odors *do* have a proper place in aerosol paints, however. Whether or not odor is a problem in a particular product, the manufacturer should consider adding a reodorant

to his product. A reodorant will help curb objectionable odors, though its *major* role is to lend a distinctive scent to the finished coating. This scent is meant to serve as a trademark for a product or line of products. It can be important in repeat sales, especially where the consumers are so often women. The comment so often goes like this: 'I don't know just why I like that particular paint, but it smells nice . . .'

". . . The universal paint deodorant has not yet been discovered, nor is it a likelihood. The masking agent for latex paints is unrelated to the mask required for an alkyd or an acrylic. Each problem can be solved, but it requires an individual rather than an industry-wide attack. Despite the single-shot nature of each solution, odorant chemists are quite aware of cost factors and can hold them within reasonable bounds. A brief consultation will generally enable a good odorant chemist to advise what can be done within the necessary price limitation.

"Remember that very small amounts of deodorant are used. Although $1.50 a pound seems high, the use of 0.5% of $1.50 pound oil is much more expensive than 0.1% of a $3.00 oil. The chief idea is to effect adequate masking at low concentrations — 0.5 to 0.25% when possible. This helps the finished coating too, since paint with 1% of a masking agent, no matter how cheap it is, may perform quite differently from paint containing 0.5% of the same material."

•

APPROXIMATELY 75 million aerosol packages were produced in all of Europe in 1958, estimates the December issue of Druk-Pak's *European Aerosol Survey*. The figure is a 32% increase over the newsletter's prediction for 1957, and so far as is known, is the only European estimate published anywhere. The December issue, incidentally, was the last *Survey* to be published by Druk-Pak.

The periodical predicts new and exciting developments in Europe, particularly in the propellant field. "After all, propellants lie in fields of chemicals and physics at which Europeans have always excelled. During the war and for a time afterward they lost their leading position, but are now again in the ascendency and already equal (if not ahead) of the U. S."

In summing up, the "Survey" concludes:

"It is indeed astounding that within such a short period of time—five to six years—Europe has built a complete industry in this packaging field. This industry includes container manufacturers of all kinds, valve and propellant producers, equipment suppliers, cosmetic houses, chemical companies, fragrance and essence suppliers, wholesalers, retailers, etc. Starting from nothing at all, the industry now employs thousands of people, ships annually millions of its containers to millions of customers and has a turnover in millions of dollars. Fairly appraised, we do not know of any aerosol loader in Europe (there may possibly be just one exception) who has failed or gone out of business. Most of them have expanded and are continuing to expand. The post Marshall Plan economic and industrial climate has undoubtedly had a great deal to do with this—it has been a healthy time for industry generally—but the record of a brand new industry is always something different. Our industry seems to have thrived quite well." ★

Consultant's Corner

(*From Page* 34)

he was "sick and tired" of spending X dollars per pound. Anyone expecting to hold his business, he said, would have to cut the current price for the fragrance, something that could not be done by the perfumer in question (or by any other). The fragrance in the product was altered drastically, the product quickly developed consumer doldrums, and the entire effort failed. By one major error in judgment the executive ruined a successful product, contributed to the failure of his company, and put himself out of a job!

Before leaving this theme I should point out that the art of perfuming

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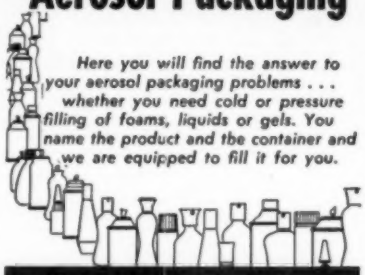

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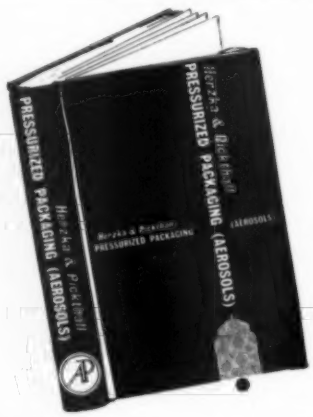
aerosols (or any other product) consists of infinitely more than simply adding a pleasant odor that appears (on the surface) to accomplish its purpose. There are nearly 3000 commonly used ingredients in the perfumer's trade, varying all the way from ethereal liquids to dense solids, gums, waxes, etc.

In any perfume there may be several hundred constituents and the finished product *must* be checked out for odor stability, compatibility with the rest of the product, susceptibility to corrosive and other types of breakdown, color stability and consistency, development of resinous residues or precipitate, primary irritation characteristics, solvent or plasticizing effect, permanence or lack of it (as desired), and suitability of the finished odor type for the specific job.

The perfume companies are well equipped to help the aerosol marketer solve his product fragrance problem. It is entirely possible their efforts can provide the extra lift to carry your product above and beyond your competition.★



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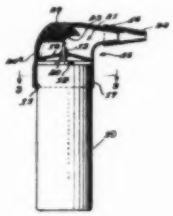
New Aerosol Patents

Listed below is a brief review of recent patents pertinent to the aerosol and related industries.

Complete copies of these patents may be obtained by writing to the publisher of this magazine, Aerosol Publications, Box 31, Caldwell, N. J., and remitting 50c for each copy desired. For orders received outside of the United States the cost will be $1.00 per copy.

2,865,370. Dispensing Adaptor For Disposable Aerosol Units. Issued Dec. 1958 to Daniel H. Gattone, Drexel Hill, Pa., assignor to Birch & Gattone, Incorporated, a corporation of Delaware.



A dispensing adaptor for use with disposable aerosol units having a hollow valve stem, comprising a hollow body formed with a coupling skirt, a centrally apertured plate mounted in the body above the skirt engageable over the valve stem, valve operating means carried by the body positioned above the end of the valve stem, and a discharge nozzle extending from the said body, said valve operating means being an enlargement formed on a wall of the hollow body and including a combined cam and nebulizer surface.

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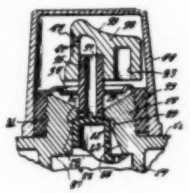
2,862,648. Flexible Dispensing Head For Pressurized Containers. Issued Dec. 1958 to Ralph D. Cooksley, Morristown, and William Lester, Mountainside, N. J.



In a pressurized container, a container assembly having an outwardly-extending nipple portion thereon, said nipple portion having a discharge opening and a seat adjacent the lower end of the discharge opening, a valve element operable in the nipple portion and normally retained against the seat by the pressure of the contents within the container, said nipple portion having a depressed conical outer end face flaring outwardly from the outer end of the discharge opening, a flexible dispensing head tightly fitted upon the nipple portion and having a depressible diaphragm overlying the conical end face, said diaphragm having an integral tubular projection depending into the discharge opening of the nipple portion and through which the contents is discharged, said tubular projection being engageable with the valve element to force the valve element from its seat, upon the dispensing head being depressed, said diaphragm normally lying away from the conical face of the nipple and seated upon the conical end face when depressed to minimize the space thereunder whereby to prevent the contents from collecting under the diaphragm when the container is used and the ultimate loss thereof.

•

2,862,646. Powder Particle Aerosol Generator. Issued Dec. 1958 to Richard E. Hayford, Pittsford, and Carl B. Kaiser and Herbert E. Grumrine, Rochester, N. Y., assignors to Haloid Xerox, Inc., Rochester, a corporation of New York.

A generator of an aerosol of powder particles comprising a housing, a support layer positioned in said housing and having thereon a substantially flat surface, drive means to rotate said layer in a predetermined path including at all times positioning at least a portion of said surface substantially in a horizontal plane while facing in an upward direction, meter means within said housing positioned along the path of movement of said surface through which said surface moves substantially in a horizontal plane adapted to meter a uniform amount of powder particles to said surface and adapted to retain on said surface against said meter means a supply of powder particles, said surface being characterized by its ability to uniformly load with powder particles as it moves beneath a supply of powder particles, said meter means being positioned at a slight distance above said surface, brushing means positioned along the path of movement of said surface through which said surface moves substantially in a horizontal plane adapted to agitate powder particles metered to said surface, input means adapted to supply a flow of gas into said housing, and output means positioned at a slight distance above said surface along the path of movement of said surface through which said surface

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moves in a horizontal plane, said output means being adapted to carry off a gaseous suspension of powder particles out of said housing.

•

2,862,638. LABELLING MACHINE. Issued Dec. 1958 to Sydney E. Banks, Sheffield, England, assignor to Morgan Fairest Ltd., Sheffield, England.

A labelling machine comprising a rotatable delivery drum with suction openings in its periphery, means to feed to the drum a close succession of articles to be labelled, means to guide the articles into contact with a portion of the periphery of the drum, a rotatable multiplate pick-up member with apertured plates, a gumming device to apply liquid gum to the plates alongside the apertures a label stack for the application of a label to a gummed pick-up plate, means to rotate the pick-up member intermittently to bring a plate, carrying a label to rest near the delivery drum clear of the portion contacted by the articles, a transfer pusher movable in a circular orbit to pass through an apertured plate in such position of rest to detach the label from the plate and to carry the label into proximity with the delivery drum, section openings in the pusher to hold the detached label, means to rotate the pusher holding the label additionally about an axis parallel to the axis of its circular orbit to bring the ungummed face of the label tangential to the periphery of the drum, the pusher moving at the same speed and in the same direction as that periphery, and means to control the suction at the pusher and the drum for the drum to take over the label from the pusher and carry it to and roll it on an articles to be labelled.

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Trade Mark Applications

Applications for registration of the following trademarks were published in recent issues of the *Official Gazette* of the U. S. Patent Office. In not all cases are there strictly aerosol trademarks, however many of the products listed below come within the category of those for which a possible future use in aerosols is foreseen.

POLY SPRAY JET, for liquid cleaning preparation for general cleaning, de-waxing, de-greasing, and disinfecting. Filed March 21, 1957 by U. S. Polychemical Corp., Newburgh, N. Y., with first use reported as Sept. 1, 1956.

SPRAY-AIR, in outline letters, for aerosol can of a special concentrate for inflating tires and also to be used as a fire extinguisher. Filed Aug. 22, 1957 by Lustre Products Corp., Lansing, Mich., claiming first use July 22 of same year.

4-SIGHT, for eye glass cleaner and antifogger. Filed May 29, 1958 by Hyrol Chemical Co., Chicago, with first use reported as May 27 of same year.

CAPE TAN, in heavy script letters, for suntan lotion. Filed June 5, 1958 by Madmark Laboratories, Falmouth, Mass., reporting first use May 6 of same year.

ODO-MATIC, for personal deodorant. Filed March 24, 1958 by The Odorono Co., Inc., Stamford, Conn. claiming first use March 5 of same year.

DOGETTE, for dog freshening, deodorizing, and grooming spray. Filed July 29, 1957 by La Bora, Inc., Chicago, claiming first use July 22 of same year.

PEANUT PUF, for foamed peanut butter. Filed June 7, 1957 by Sunshine Biscuits, Inc., Long Island City, N. Y., assignee of Peanut Fluf Co., Detroit, Mich., reporting first use April 26 of same year.

MYSTIC FOAM, in outline letters boxed at an angle, for cleaning preparation for fabrics of all kinds sold in an aerosol-type container. Filed March 26, 1958 by Dumas Milner Corp., Jackson, Miss., claiming first use March 20, 1955.

PLASTOSTAIN, for stains, plastic coatings, lacquers, varnishes, fillers, and paints. Filed June 12, 1957 by Snyder Brothers Co., Toccoa, Ga., with first use reported as May 17 of same year.

SWORDSMAN, in bold face type, for hair conditioner, men's cologne, deodorants, hair straightening preparations, hair coloring rinses, and other cosmetic products. Filed Jan. 16, 1958 by Pelindo, Inc., New York, claiming first use June 1 of previous year.

FAS TAN, for sun tan lotion. Filed March 12, 1958 by Coty, Inc., New York, claiming first use May 15, 1956.

LITHOFORM, for fluid chemical or chemical compound for preventing paint from peeling off galvanized iron. Filed June 27, 1958 by Amchem Products Inc., Ambler, Pa., reporting first use March 1, 1917.

STAUFFER, for industrial chemicals and agricultural chemicals—namely herbicides, insecticides, fungicides, fumigants, nematicides, defoliants, acaricides, and others. Filed March 24, 1958 by Stauffer Chemical Co., San Francisco, claiming first use in 1884.

FOCUS, for eye glass cleaner and anti-fogger. Filed May 27, 1958 by Hyrol Chemical Co., Chicago, Ill., with first use reported as May 23 of same year.

POISE, for body deodorants. Filed March 28, 1957 by Louis Bender, d.b.a. Elbee Sales, Westfield, N. J., reporting first use latter half of 1952.

SEA AND SKIN, for lotion for use as a tanning cream, which may also be used as an after shave lotion, hair dressing, for skin rashes and irritations, and for the care of infants' skin.

TIX-TOX, for insecticides. Filed Dec. 26, 1957 by Hayes-Sammons Chemical Co., Mission, Tex., claiming first use in May, 1954.

ISCO SAFE SPOTTER, for preparations for the removal of spots and stains. Filed Sept. 18, 1958 by Chemco Specialties, Inc., d.b.a. Industrial Specialties Co., Dayton, Ohio, claiming first use Jan. 15, 1949.

VI-CHLORO-MINT MIST, for nasal spray and drops. Filed Oct. 28, 1957 by Norman Dartell, d.b.a. Dartell Laboratories, Los Angeles, Calif., reporting first use on or about June 28, 1950.

WATKINS, in script superimposed on a large "W", for spot removers and other cleaners. Filed March 18, 1958 by The J. R. Watkins Co., Winona, Minn. reporting first use Feb. 17 of same year.

AVON, for mothproofing and mothkilling preparations and room deodorizing preparations. Filed Sept. 10. 1957 by Avon Products, Inc., New York, reporting use in Sept. 1929.

CHROME SHEEN, in outline letters, for protective coating for chrome surfaces and other metals of a similar nature. Filed Sept. 4, 1958 by Lustre Products Corp., Lansing, Mich., claiming first use July 15, 1957.

MILAIR, for perfumes, colognes, body deodorants, dipilatories, hair tints, hair dressing, shaving creams, lotions and powders, and other cosmetics. Filed April 22, 1958 by Haering & Co., Odol-Fabrik, Kosmetische Produkte, Goldach, Canton of St. Gall, Switzerland.

•

Mallegol Joins Fleuroma

Andre J. Mallegol has joined the sales staff of Fleuroma, Inc., New York, essential oil dealer. He will be a member of the company's sales staff covering Metropolitan New York and Pennsylvania.

CLASSIFIED ADVERTISING

Rates for classified advertisements are ten cents per word, $2.00 minimum, except those of individuals seeking employment which *Aerosol Age* will run without charge. Check must accompany all classified advertisements. Address all replies to Classified Advertisements with Box Number, care of *Aerosol Age*, Box 31, Caldwell, N. J. Closing date: tenth of month preceding month of issue.

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Carbide in Belgian Venture

The formation of a new Belgian company that will manufacture polyethylene was announced last month by Union Carbide Corp., New York. The new organization, to be named Cobenam, S. A., will be owned jointly by Union Carbide and the Belgian company, Societe Chimique des Derives du Petrole S. A., Petrochim. Petrochim is an affiliate of Societe Generale, the large Belgian financial and industrial group.

Plans call for the construction of a plant having an initial capacity of 30 million pounds of polyethylene annually, with production estimated to commence in mid-1960. The plant site will be located near Antwerp between the Petrochim chemical plant and the Societe Industrielle Belge des Petroles (SIBP) refinery. The new installation will receive its raw material from SIBP. Technical know-how will be provided by Union Carbide.

The Editor's Mailbag

(*From Page 8*)

Also, we would like to call your attention to what appears to be a discrepancy in the facts as presented. At several points, it is pointed out that the advantage of the high order of solubility of CO_2 in most products is that pressure drop during dispensing is negligible. However, at a later point where container temperature versus pressure relationships are being discussed, the effect of gas solubility pressure relationships was apparently overlooked. We quote, "with an increase in temperature of 80°C. the gas volume increase would amount to only 24%. This would correspond roughly to a pressure increase of 0.3 atmospheres." While this is true in a container void of product or where propellant solubility in the product is O, in practice the great solubility of carbon dioxide in most products results in a considerably greater pressure increase at elevated temperatures.

We would appreciate it if you would either furnish additional information on this propellant material or provide the basis for our further contact with the author.

E. D. Giggard
CONTINENTAL CAN CO.
Special Products Section
Chicago 20, Ill.

The above letter is published to call attention to an error that may have resulted in the translation of the original article from the German. We have referred the writer to Dr. Haase, who informs us that sometime later this year he will have ready another article, which will clarify some of the questions posed by the original article.—The Editor.

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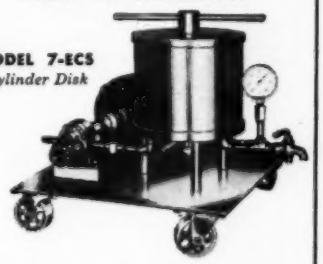

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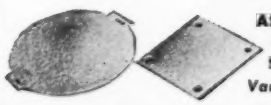

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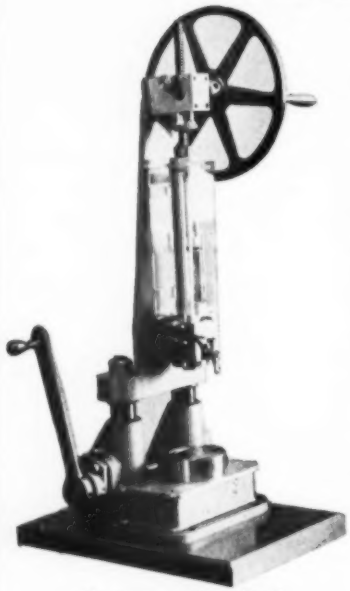

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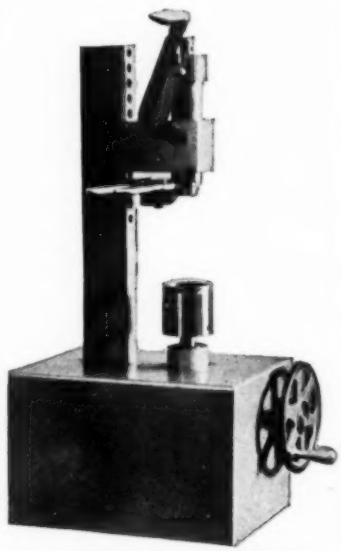

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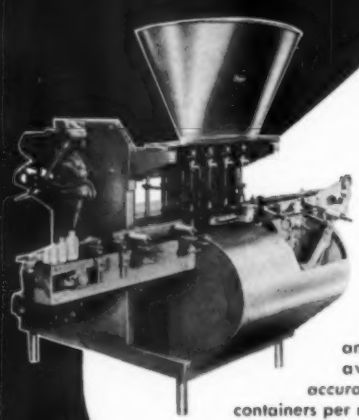

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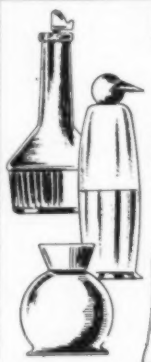

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Hitchcock Joins Shulton

The appointment of Frederick C. Hitchcock, Jr., as assistant to president George L. Schultz, has been announced by Shulton, Inc., New York aerosol marketer. His primary responsibility will be to assist Mr. Schultz and the company's division managers in evaluating present and developing new marketing methods for Shulton.

Prior to joining Shulton, Mr. Hitchcock was director of new products for Warner-Lambert Pharmaceutical Co. Before that he was vice president-sales of the Thomas Laughlin Co., and group product manager of General Foods Corp.

Marcel Franck Visits U. S.

Marcel Franck, president of the French aerosol valve company bearing his name, visited the U. S. in December. While here he met with his U. S. licensee and distributor (for his company's line of atomizers) and then flew on to Mexico City to visit his agents there.

OVER THE TRANSOM

AS this issue went to press, we had an authoritative report that A.O. Samuels, founder and former president of Connecti-

cut Chemicals, has gone into the motel business in Connecticut. According to our informant, Mr. Samuels, who resigned from B. T. Babbitt last May, has purchased a hotel near Greenwich, Conn. (for conversion to a motel) and is also building a new $1 million motel near Westport.

* * *

Jack Paar, National Broadcasting Corp. television star, has devised a form of "Russian Roulette," using an aerosol, on his nightly television show. Holding an aerosol can at arm's length in front of him, Mr. Paar closes his eyes, twists the can several times, and then actuates the valve. About one third of the time, he succeeds in hitting himself in the face or shoulders with the spray.

* * *

The United States Dept. of Commerce, which has largely ignored the aerosol industry in its periodical reports on the metal can industry, finally mentions pressurized packaging in its "Outlook for 1959 and Review for 1958 in the Metal Can Industry." This report devotes the following three paragraphs to our industry:

"Another growth area for the metal can industry is in aerosol packaging. Since 1951 the total output of non-food products packed in aerosol and pressurized containers increased 897%. In 1957, the aerosol non-food pack totaled 340 million units, of which about 94% was in metal cans.

"The increase in 1958 metal can business over 1957 resulted from heavier demand for cans for fruits and vegetables, fish, beer, soft drinks, coffee, tomatoes, specialty foods, soups, liquid detergents, and lard and shortening. Non-food aerosol packaging has also been a major plus factor in 1958 business.

"For 1959, the use of aerosol cans for packaging non-food products will increase and some expansion will occur in food products."

* * *

Heightened competition seems to be springing up in the overcap field. New designs and variations of old ones, new producers and stepped up activity by older producers to win larger shares of the market seem to be bringing with them some of the less flattering manifestations of highly pitched competition (including price cutting).

"Some slick-talking city feller sold it to me . . . claims it'll last three years !"

Donald S. Tuttle, Jr., sales manager of the Risdon Mfg. Co.'s Valve Division, in a letter to the editor of *Printers' ink*, points out that the magazine's article in November, 1958, neglected to give the fragrance industry proper credit for its aerosol development. The text of the letter follows:

> **Congratulations on your excellent review of new packaging concepts (November 21, page 21). However, much has been done by one industry to give individual looks to aerosol packages — and that is the fragrance industry. The pharmaceutical and food industries would do well to follow the lead of the fragrance industry in its design of smart and distinctive aerosol packages.**

* * *

Among the more interesting of the trade circulars received in the *Aerosol Age* office last month was one from a leading manufacturer of hand sprayers. One of the key "message" lines reads: "Provides the Ease of an aerosol." Since the hand sprayer came long before the aerosol, we call this downright flattering to the pressurized packaging industry.